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ABSTRACT

A nationwide sample of kindergarten classes in over 2,000 schools provided information on their use of the SWRL/Ginn Kindergarten Program for the second consecutive year, 1975-76. Replicating an initial inquiry, the data showed that (1) high overall levels of outcome proficiency can be reliably attained in kindergarten reading instruction; (2) pupils from categories representing the full range of racial-ethnic characteristics present in American schools can achieve high levels of proficiency on program outcomes under ordinary school conditions; and (3) variations in program outcome proficiency are systematically related to characteristics of program use and instructional emphasis rather than to imputed personal deficiencies of pupils or their family situations. It was noted that many children in the categories that typically display lower levels of reading proficiency--minority groups and students in ESEA Title I eligible schools, lower income levels, and urban and inner city locations--were not given as much instructional time and did not complete as many units as users in the other categories. The composite picture of program use across the two years of installation shows slight improvements in the overall results attained, resulting from positive adaptations by schools in their manner of program management and use. (Author/MKM)

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INSTRUCTIONAL PRODUCT IMPLEMENTATION AND SCHOOLING EFFECTS: LESSONS
FROM THE SECOND-YEAR INSTALLATION OF THE SWRL/GINN KINDERGARTEN PROGRAM

Ralph A. Hanson and Richard E. Schutz

ABSTRACT

A nationwide sample of kindergarten classes in over 2,000 schools provided information on their use of the SWRL/Ginn Kindergarten Program for the second consecutive year. Replicating the initial inquiry, the data show that (1) high overall levels of outcome proficiency can be reliably attained in kindergarten reading instruction; (2) pupils from categories representing the full range of biosocial characteristics present in American schools can achieve high levels of proficiency on program outcomes under ordinary school conditions; (3) variations in program outcome proficiency are systematically related to characteristics of program use and instructional emphasis rather than to imputed personal deficiencies of pupils or their family situations. The composite picture of program use across the two years of installation shows slight improvements in the overall results attained, resulting from positive adaptations by schools in their manner of program management and use.

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Matters of implementation are increasingly being recognized as important aspects of educational R&D as well as public policy and planning generally. Installation of the SWRL/Ginn Kindergarten Program (KP) in the nation's schools for the second-year (1973-74) provided an opportunity for empirical inquiry regarding the speculations that currently surround implementation and dissemination in education. It also provided an opportunity to verify and extend the findings of the first-year installation effort (Hanson & Schutz, 1975).

The quality assurance (QA) information for the first-year installation produced dramatic evidence of the effects of Kindergarten Program instruction on pupil reading proficiency. Pupils representing the range of biosocial characteristics reflected in the American population took part. Numerically, the participating children represented nearly 20% of the kindergarten pupils in the country. High levels of program outcome proficiency were reliably attained where the data indicated full instruction was delivered. Further, the data indicate that the primary determinant of whether or not pupils attained high proficiency on program outcomes was the instructional emphasis placed on program use by schools. Where instruction using the Program was started within the first ten weeks of the school year and approximately 30 minutes daily instruction was provided thereafter, the full program was completed during the school year, and pupils displayed high levels of proficiency on end-of-program assessments. Thus, the determinants of proficiency status at the end of the school year were virtually independent of characteristics such as the socioeconomic status of the pupils, prior school reading performance, entering pupil ability, and racial and/or ethnic backgrounds of pupils.

These findings are important because they depart distinctly from contemporary conclusions regarding the effects of schooling. We refer here specifically to the popular "Coleman Report" (Coleman et al., 1966) and the "Jencks Study" (Jencks et al., 1972). In both of these inquiries the effect

of schooling was measured in terms of pupil achievement on norm-referenced achievement tests. The composite picture was that the effect of schooling is minimal relative to other factors such as the pupil's background, social status and "luck." That is, individual factors, outside the control of schools were viewed as the prime determinants of achievement.

Because the first-year QA inquiry did depart dramatically from these other contemporary studies of schooling effects not only in terms of conclusions but also in methodology, it is important that the findings be "cross-validated to determine if they can be replicated." This second inquiry accomplishes that objective and also extends the programmatic QA inquiry into other areas.

Probably the most important extension is embodied in an examination of the changes that occur in program use and schooling effects as users obtain experience with a well-developed instructional product. Because instructional products that have been developed through programmatic R&D, such as KP, have only recently become widely available, there is little available information on this topic. Arguments have always been made that innovation in education inevitably deteriorates as novelty declines. However, there is also some reason to believe that these new instructional products provide a mechanism for breaking the "Hawthorne Effect" common in educational innovations. The second-year installation provides a vehicle for testing these counter-contentions.

The specific questions addressed in this inquiry are straightforward:

1. Does the second-year ICP/QA installation provide a replication of the first-year's findings on program effects?
2. In what ways, if any, do these results depart from those presented earlier and thus provide new information on the effects of educational R&D and schooling?

These two questions are dealt with simultaneously in the report. In each section the 1973-74 results are presented using identical analyses to those presented in the report on the 1972-73 installation. Information that permits a comparative interpretation of the reports across the two years is then presented.

MATERIALS AND OPERATIONS

The materials and operations of the second-year installation of KP were virtually identical to those used the previous year. Since they have been described in considerable detail in the earlier report, only a brief summary that highlights the changes instituted in 1973-74 will be presented.

Programs

KP includes two instructional programs: the Instructional Concepts Program (ICP) and the Beginning Reading Program (BRP). ICP is composed of seven units that teach 96 concepts related to colors, sizes, shapes, amounts, positions, and comparisons. BRP is composed of 10 units and is designed to teach kindergarten pupils to read 100 words, sound out and read new words composed of specific word elements, and read sentences composed of both the sight and blending words they have learned. In addition, BRP includes three optional support programs designed to assist teachers in providing practice on program concepts and skills. These are the Parent-Assisted Learning, Tutorial, and Summer Reading Programs.

Source Data

Participating schools and classes completed six source data records during the year. Teachers provided five of these items, and the District Coordinator provided the other.

1. Entry Survey Pupil Response Sheet--Used to record responses to a 22-item, individually administered, program-specific reading readiness measure (Coker & Legum, 1975) that was to be given during the first month of school. Originally, it included four forms. However, to simplify matters, only two of the four parallel forms were used in 1973-74. Also, teacher rather than optical scanning of the record was implemented since total score rather than item data was all that was required.
2. ICP Unit Report--Used to record the instructional start and unit completion dates and pupil scores on the Unit Criterion Exercises for each of the seven ICP units. The only change made to this Report format from 1972-73 to 1973-74 was inclusion of a field to indicate the exact program start date for each pupil.
3. ICP Assessment Record Sheet--Used to record pupil scores on the 30-item individually administered measure given after the completion of ICP instruction. To simplify matters, only two of the four parallel forms used in the 1972-73 KP/QA inquiry were used in 1973-74. Also, teacher rather than computer scoring was used. Since the measure is individually administered and yields a single total score, the scoring required only modest additional contribution of teacher time and provided teachers immediate feedback.
4. BRP Unit Report--Used to record the instructional start and unit completion dates and the scores of pupils on the ten BRP criterion exercises. The only change in this Record from the 1972-73 inquiry was inclusion of a precise program start date.

5. BRP Assessment Record Sheet--Used to record the outcome scores obtained on the BRP assessment. The assessment is a set of 43 items administered to pupils by their teacher at the completion of BRP instruction or at the end of the school year, whichever occurs first. It yields scores on the four major Program outcomes. To simplify procedures, only two of the four parallel forms used in the 1972-73 inquiry were used in 1973-74.

6. School Information Sheet--The district coordinator was asked to complete six items of information for each participating school. This Sheet, identical to that used in 1972-73, provides basic information on biosocial characteristics of pupils at that school. These include, eligibility of ESEA Title I funds, percentage of ethnic minorities enrollment, and so on.

Data Collection Operations

The data collection operations during the 1973-74 inquiry were essentially the same as in 1972-73 and are described in Figure 1. Several changes were introduced to improve the efficiency of the operations, but these did not alter the general structure of operations. The most significant operations improvements involved procedures for identifying and distributing materials to school districts.

The QA coordinator designated by the district served as the liaison between SWRL and the participating schools. All materials forwarded and returned to SWRL from a district passed through the coordinator. The coordinator took responsibility for QA record distribution and collection for all schools in the district.

A major operational improvement was the use of pre-labeled class records. A computer-generated label that included the identifying class ID number and district, school, and coordinator names was affixed to each classroom record prior to distribution. This greatly simplified the coordinator's distribution/return operations within a district, and it also simplified the data-entry for computer processing.

User Reports

The user report structure and schedule of delivery were identical in the two years. Status Reports were sent to district coordinators at two points during the school year, and Summary Reports for each class, school, and district were sent following the close of the year.

Not only did the reporting structure and schedule remain the same, only minor changes were made in the user report formats themselves. To the Status Reports, the entry under each record was changed from an "x," indicating it was returned, to the number of pupils on which data was received. In this way any pattern of change in participation at the pupil level within classes would be revealed across records returned.

Figure 1. Timeline of 1973-74 events.

<u>Date</u>	<u>Event</u>
August 15 - September 1	Receipt of first classroom material sets (Entry Survey, Entry Survey Pupil Response Sheet, ICP Unit Report, BRP Unit Report, and Teacher's Guide) and Roster/Checklist by Coordinator.
1st Week of School	Distribute first classroom material sets to teachers using Coordinator's copy of the Roster/Checklist. Return second copy of Roster/Checklist to SWRL.
2nd Week of School	Return of completed Entry Survey Pupil Response Sheets to Coordinator by teachers.
3rd Week of School	Forward Entry Survey Pupil Response Sheets to SWRL.
November 1 - November 15	Receipt of second classroom material sets (ICP Assessment Instructions, ICP Assessment, ICP Assessment Pupil Response Sheet) and first District Status Report.
November 15 - November 20	Distribute second classroom material sets to teachers using Roster/Checklist. Return of Status Report with any corrections to SWRL.
January 25	Return of completed top sheets of ICP Unit Reports and ICP Assessment Pupil Response Sheets to Coordinator by teachers.
February 1	Forward completed ICP Unit Reports and ICP Assessment Pupil Response Sheets to SWRL.
March 1	Receipt of third classroom material sets (BRP Assessment Guide, BRP Assessment, BRP Assessment Score Sheet) and second District Status Report.
April 15	Distribute third classroom material sets to teachers using Roster/Checklist. Return of Status Report with any corrections to SWRL.
Last Two Weeks of School	Return of completed top sheets of BRP Unit Reports and BRP Assessment Score Sheets to Coordinator by teachers.
Last Week of School	Forward completed BRP Unit Reports and BRP Assessment Score Sheets to SWRL.
Late Summer	Receipt of the final QA User Reports and Report Guides for each class, school and the district.

The only addition to QA Summary Reports were precise instructional start dates for both ICP and BRP. All other entries were identical to those provided the previous year. Maintaining information comparability across years is an important concern of QA to permit consistent year-to-year planning information for districts, schools, and teachers.

PROGRAM USE AND PARTICIPANTS

The number of pupils, classes, schools, districts and states using each possible configuration of KP is given in Table 1. These data indicate that the vast majority of users used both ICP and BRP. Also, about 20% of the participants used one of the support programs (either the Parent-Assisted Learning or Tutorial program). In this regard, PAL was by far the most frequently used.

Table 1
Number of QA Participants

Program Configuration	States	Districts	Schools	Classes	Pupils
ICP only		24	210	549	14053
BRP only		6	74	189	4413
Both	18	264	1739	3719	86982
Support Programs (PAL and Tutor)	15	84	178	276	6747
ICP total	18	288	1949	4262	111485
BRP total	18	270	1813	3908	91395

Biosocial Characteristics

A description of the QA participants in terms of the biosocial categories included on the School Information Sheet is given in Table 2. An examination of the distributions across the categories for each item indicates the following:

1. The median family income of the participating QA schools is in the \$5,000-8,000 range with approximately 40% reporting in that category. Overall, fully 73% of the school median family incomes fell in the \$5,000 to \$12,000 range. Further, only 11% reported incomes above \$12,000. Even allowing for the effects of inflation, it would appear that the average income of families was considerably below the national average.

2. Schools were described as Black, Spanish-surnamed, or Other, based on whether half or more of the pupils in attendance were from the ethnic/racial category. Based on these entries, about 18% of the schools were described as Black, 5% Spanish-surnamed, and 77% Other. The next section discusses the comparability of these figures to the percentages of these groups in the larger society.

3. In terms of location, 56% of the schools were in either urban or inner city areas. Coupled with the 34% located in suburban areas, a total of over 90% of the schools were in or near cities.

4. The schools indicated their prior level of performance relative to national norms on standardized reading tests. Only 23% indicated performance above the national reading norms, with 33% at and 44% below. Thus, over three-fourths (77%) were at or below national norms in terms of prior reading performance.

5. One last question asked whether or not schools were eligible for ESEA Title I (poverty level) funding. Fifty-five percent indicated they were.

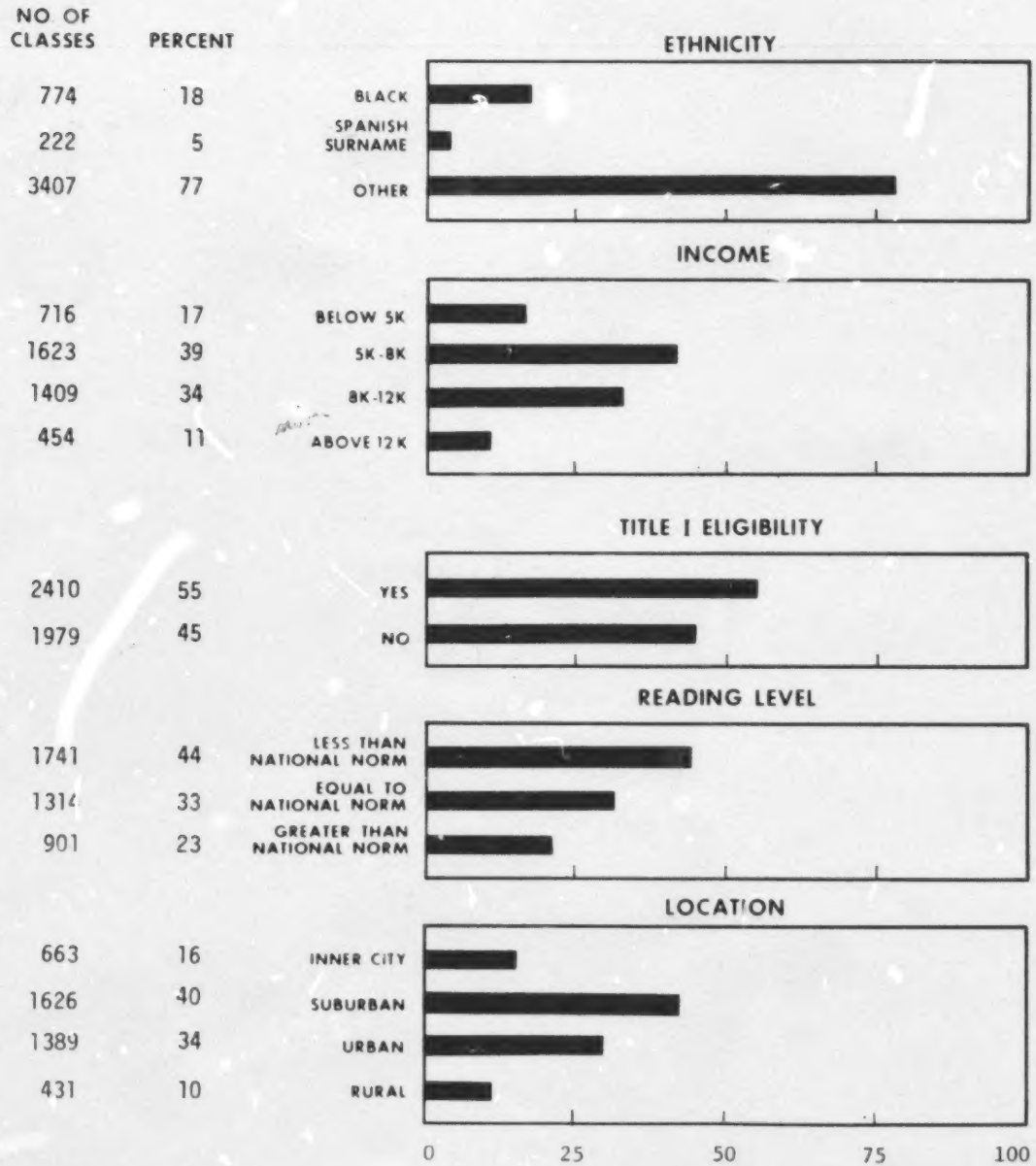
To summarize, these descriptions indicate that the QA schools represent the full range of characteristics of the nation's schools. They do however, tend to over-represent situations that typically display low educational performance patterns. At the very least, the descriptions indicate that results obtained in the inquiry should not be expected to be biased in a positive manner because of the composition of the sample.

Ethnic Representation

The fact that the percentage of each ethnic/racial group in a school was recorded on the School Information Sheet allows computation of the actual number of participating pupils in these categories. The

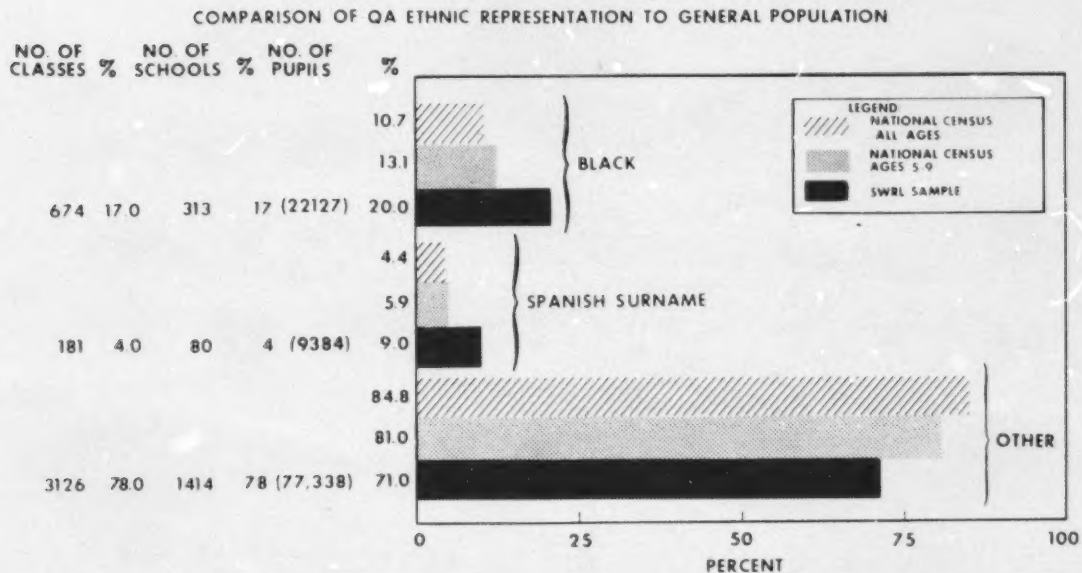
Table 2

Biosocial Characteristics of QA Participants



pupil level data can then be compared directly to the percentage of these ethnic/racial groups in the population generally. The data on the QA participants and the general population based on census sources are given in Table 3.

Table 3
Comparison of QA Ethnic Representation to General Population



These data clearly indicate that each of these two ethnic/racial groups is represented in greater proportions in the 1973-74 installation than in the general population.

Comparison of Cohorts Involved in 1972-73 and 1973-74 Analyses

The school districts participating in the 1973-74 inquiry had all been involved in the first-year installation of the Program. However, the specific schools differed somewhat, usually with expansion of Program use within the District the second year. Since teacher anonymity was maintained throughout the inquiry, there is no information on constancy of personnel at the class level. The pupils in the two years were obviously different, but the two cohorts differ by not more than 4% on the various biosocial characteristics categories, as shown in Table 4.

Table 4

Comparison of Participating Classes in the Two KP-QA Inquiries
in Terms of Biosocial Indicators

	1972-73 (N = 4023)	1973-74 (N = 4389)
<u>Ethnic Group</u>	<u>%</u>	<u>%</u>
Black	17	18
Spanish-surnamed	4	5
Other	78	77
<u>Income Level</u>		
Below \$5,000	16	17
5-8,000	41	39
8-12,000	33	34
Above 12,000	10	11
<u>Title I Eligibility</u>		
Yes	54	55
No	46	45
<u>Reading Level</u>		
Above National Norm	44	44
At National Norm	34	33
Below National Norm	22	23
<u>Location</u>		
Inner City	15	16
Urban	37	40
Suburban	38	34
Rural	10	10

PROGRAM PROFICIENCY AND COMPLETION

Four aspects of program performance were derived for both the ICP and BRP: entering proficiency of pupils, enroute proficiency, units completed, and end of program proficiency. They are summarized in the following sections in two ways: (1) for pupils, classes, and schools and (2) at the class level only for the biosocial categories.

Entry Proficiency

The Entry Survey provides an indicator of entering pupil proficiency for both KP Programs. Figure 2 shows the distribution of pupil, class, and school proficiencies on this measure. The figure displays considerable variability at all levels with the individual distributions each approximating a "normal distribution." Such a distribution is expected when pupil proficiency is assessed prior to instruction.

The average proficiency levels and measures of the variability on this measure across classes in the various biosocial categories are presented in Table 5. These data show comparable variability across biosocial categories, taking into account differences in sample size.

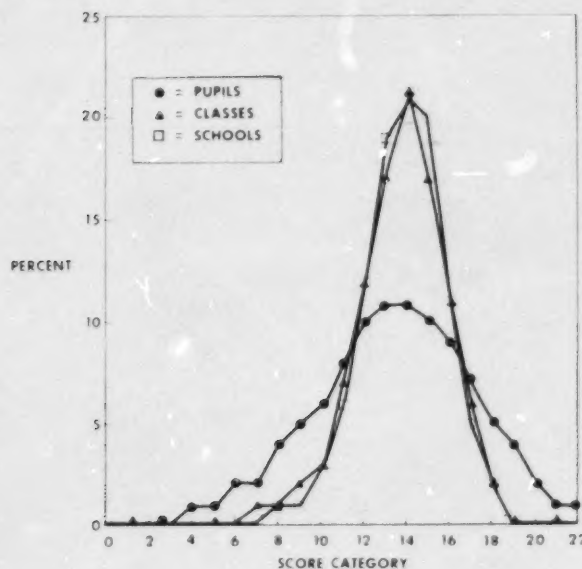
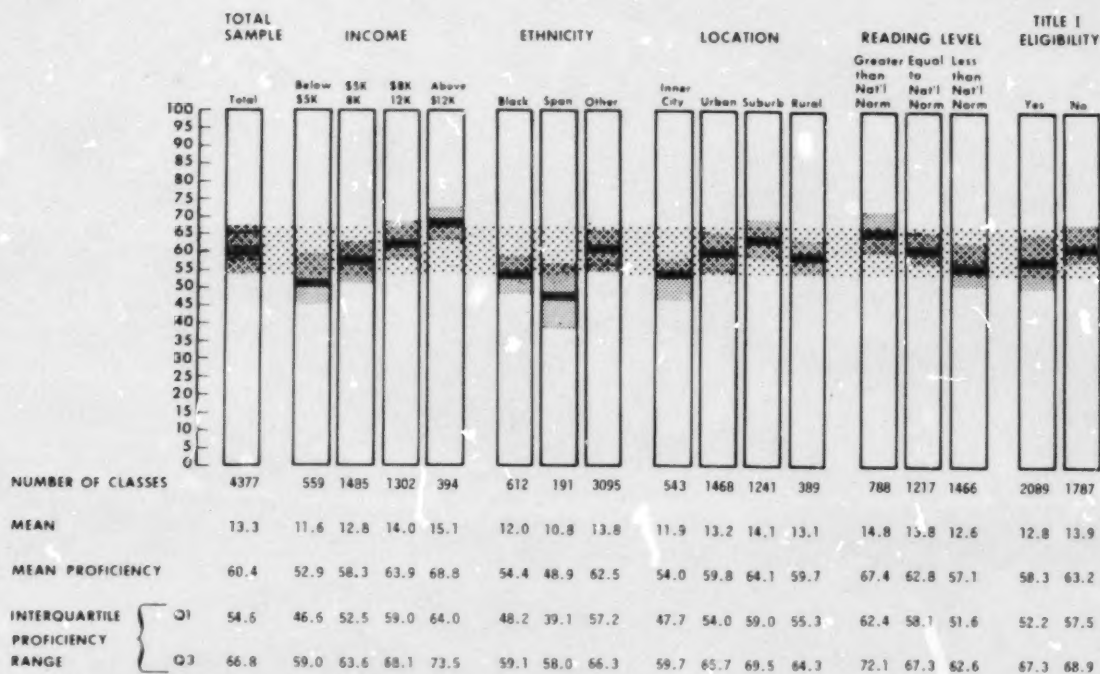


Figure 2. Entry Survey score distributions.

Table 5

Entry Survey Proficiency by Biosocial Indicators



There are, however, some differences in the average proficiency level across these categories which tend to follow expected patterns. Classes from biosocial categories that typically display lower average levels of proficiency on standardized tests of school achievement display the same patterns on this measure. Classes made up primarily of pupils of ethnic/racial minorities, from lower income families, in schools located in inner city, urban, and rural areas, with a prior track record of below average reading performance on standardized tests, and with ESEA Title I eligibility have lower average Entry Survey proficiencies than classes in the other categories of these biosocial characteristics.

ICP Unit Proficiency

Distributions of average proficiency for pupils, classes, and schools on the ICP Unit Criterion Exercises are given in Figure 3. They each display a curve with a pronounced negative skewness. These distributions clearly show that the attainments reflected in these indicators were universally high. These same data are further summarized in Table 6 with the class data for each biosocial category. They show a consistently high level of proficiency for all categories of users.

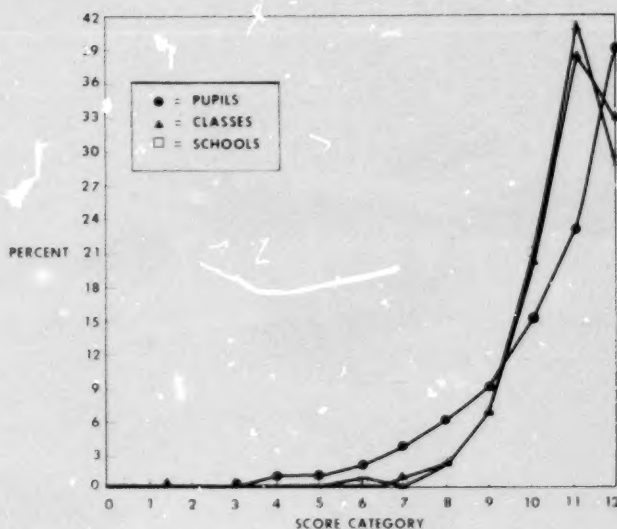
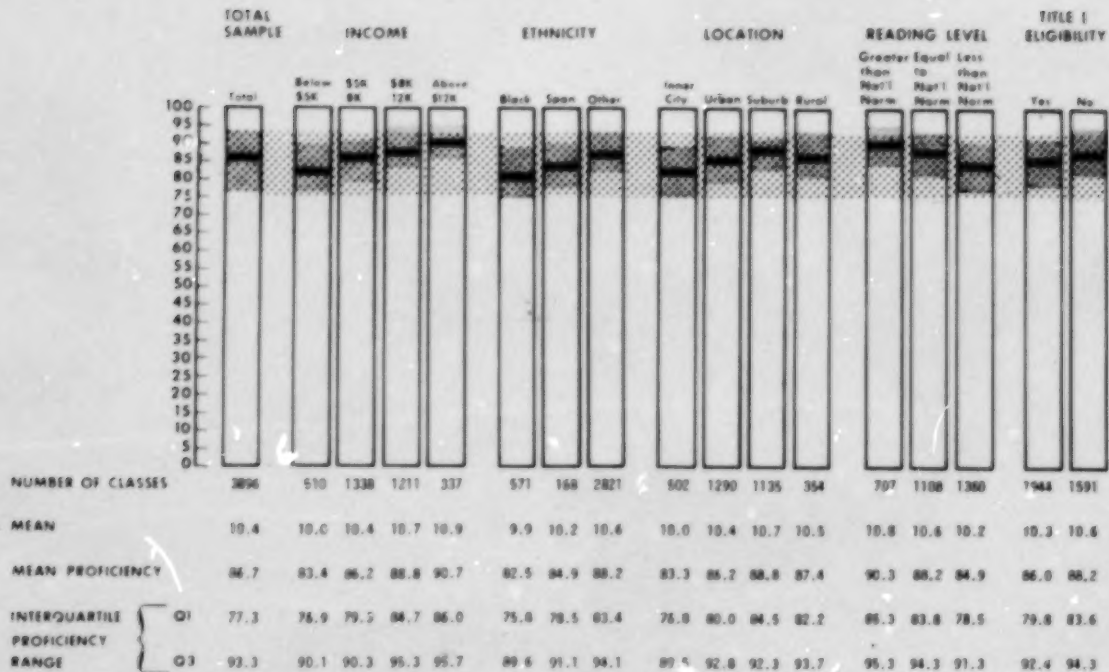


Figure 3. ICP Unit Criterion Exercise score distributions.

Table 6

ICP Unit Proficiency by Biosocial Indicators



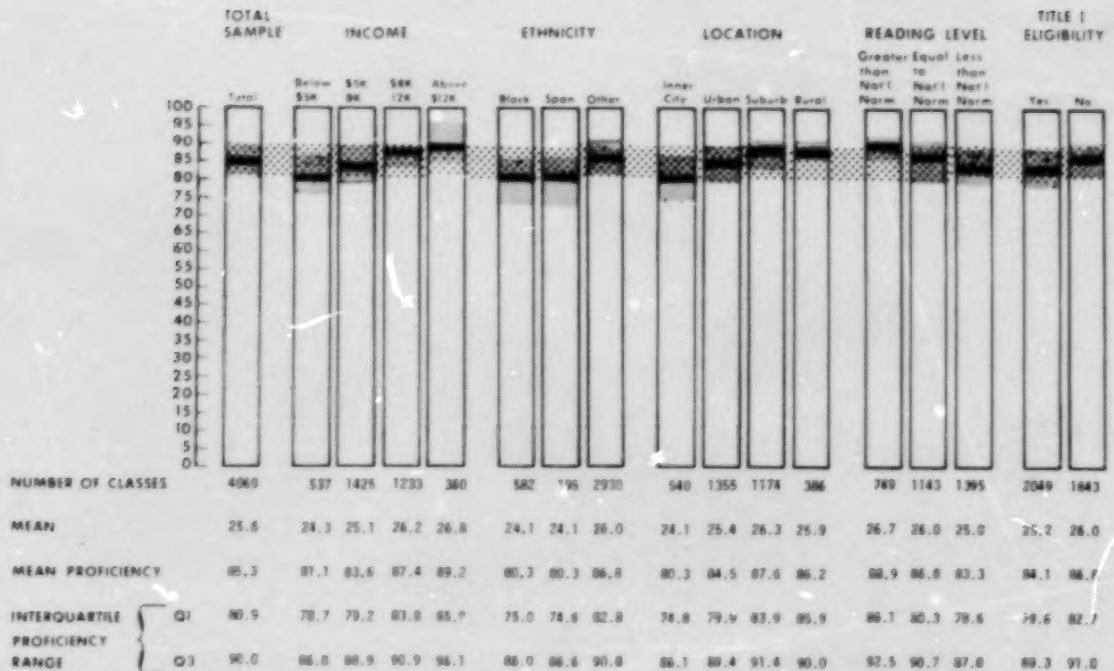
ICP Unit Completion

A desirable complement to high enroute instructional proficiency is high unit completion data. The data in Figure 4 summarize the results for pupils, classes, and schools. The distributions are almost colinear and are heavily negatively skewed, indicating that almost all participants at all levels completed all units of the program.

This same result is confirmed across the biosocial indicators presented in Table 7. There is very little variability both within and across categories.

Table 8

ICP Assessment Proficiency by Biosocial Indicators



BRP Unit Proficiency

Distributions of the average scores attained at the pupil, class, and school levels are displayed in Figure 6. They show a pattern similar to that obtained on the ICP Unit Criterion Exercises: a negatively skewed distribution indicating that most pupils attained scores in the higher categories.

Deviation from this pattern across biosocial indicators is limited, as shown by the data in Table 9. There are some differences, but relative to the overall mean (88.2%) they are fairly trivial: pupils from all categories attained high proficiency levels on the BRP units they received.

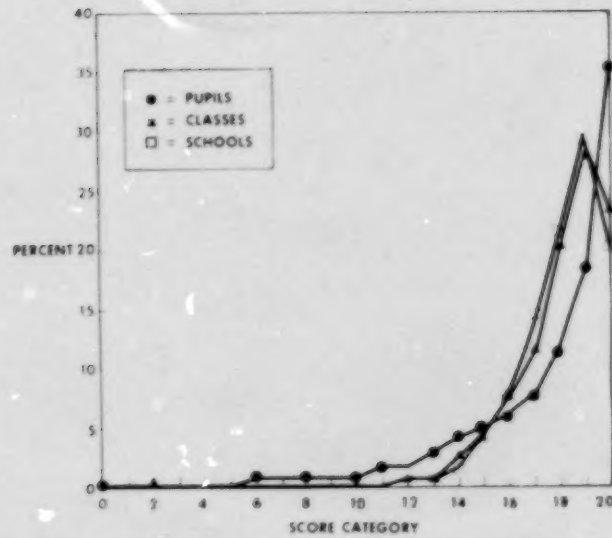


Figure 6. BRP Unit Criterion Exercise score distributions.

Table 9

BRP Unit Proficiency by Biosocial Indicators

	TOTAL SAMPLE	INCOME					ETHNICITY			LOCATION				READING LEVEL			TITLE I ELIGIBILITY	
	Total	Below \$5K	\$5K-\$8K	\$8K-\$12K	Above \$12K	Black	Span	Other	Inner City	Urban	Suburb	Rural	Greater than Norm	Equal to Norm	Less than Norm	Yes	No	
NUMBER OF CLASSES	2635	249	381	909	287	278	75	2099	297	879	861	251	594	827	799	1234	1184	
MEAN	17.6	16.6	17.4	17.9	18.3	16.4	17.4	17.8	16.7	17.5	18.0	17.7	18.1	17.9	17.1	17.4	17.9	
MEAN PROFICIENCY	88.2	83.1	87.0	89.6	91.7	82.1	87.0	89.0	83.4	89.8	90.1	88.7	90.6	89.6	85.6	87.0	89.6	
INTERQUARTILE PROFICIENCY RANGE	Q1	83.2	75.7	81.6	85.0	88.8	74.8	81.7	84.5	75.9	79.3	84.5	83.7	88.6	86.9	79.2	81.1	85.5
	Q3	94.6	92.3	99.0	95.6	95.6	92.0	93.8	94.8	93.0	97.9	97.5	94.7	95.4	95.2	93.3	94.0	95.7

BRP Unit Completion

The distributions of BRP units completed, given in Figure 7, show there is considerably more variability in this program characteristic than the others examined. This indicator reflects the amount of instruction pupils receive, and it is evident that patterns of use varied widely. Interestingly enough, the distributions do not approximate that displayed on the Entry Survey, i.e., a normal curve. Rather, they are closer to a rectangular distribution with fairly equal numbers of pupils, classes, and schools in each unit-completed category.

The same general pattern holds across the various biosocial indicator categories, as shown by the data in Table 10. As with the other program measures, there are some slight differences in the average number of units completed across these categories, and at the extreme, these average differences amount to nearly two units.

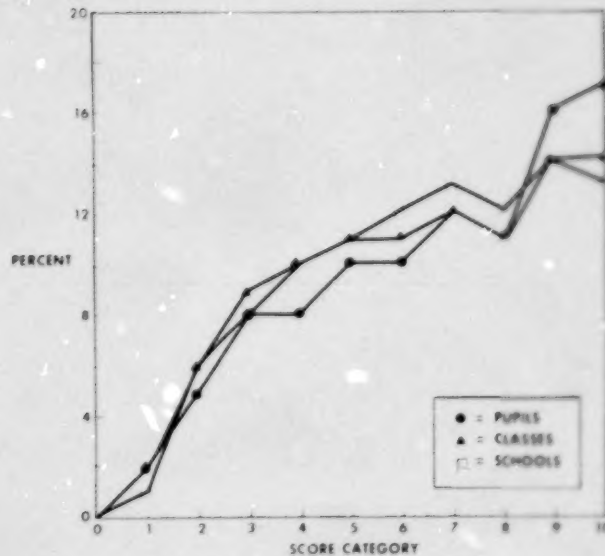
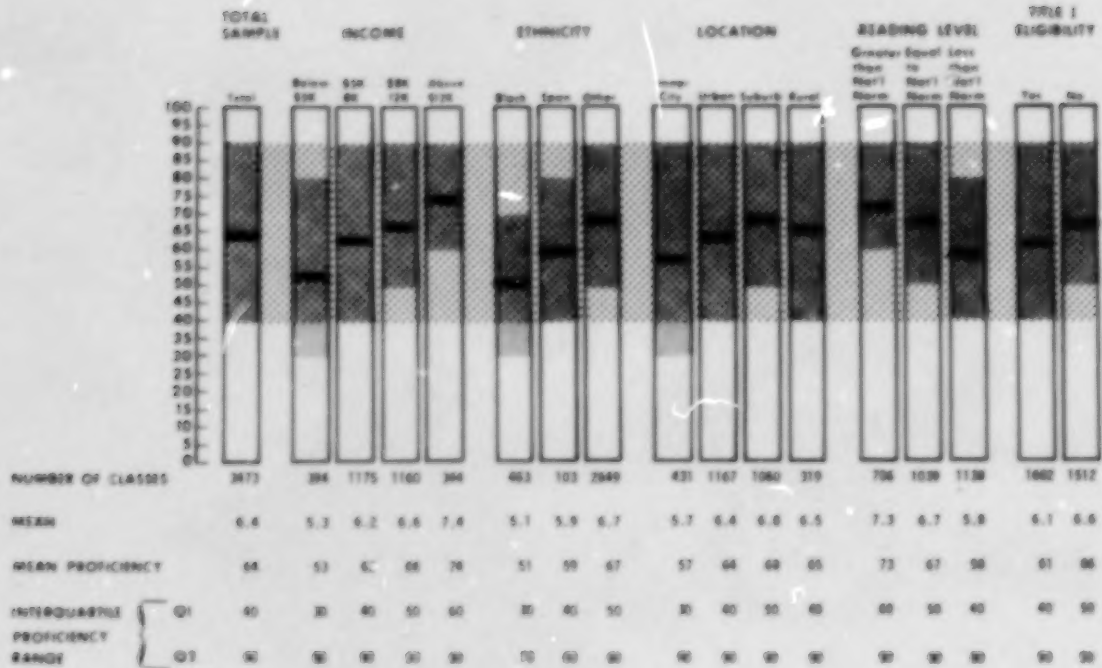


Figure 7. BRP unit completion distributions.

Table 10

BRP Unit Completion by Biosocial Indicators



BRP End-of-Year Proficiency

Distributions of pupils, classes, and schools on the four outcome scores of BRP are given in Figure 8. They show related but distinctive patterns for each indicator. The Letter Names outcome shows the negatively skewed distributions typically associated with high levels of proficiency. In such cases, the distribution lines for pupils, classes, and schools are almost colinear. Such proficiency levels are typically

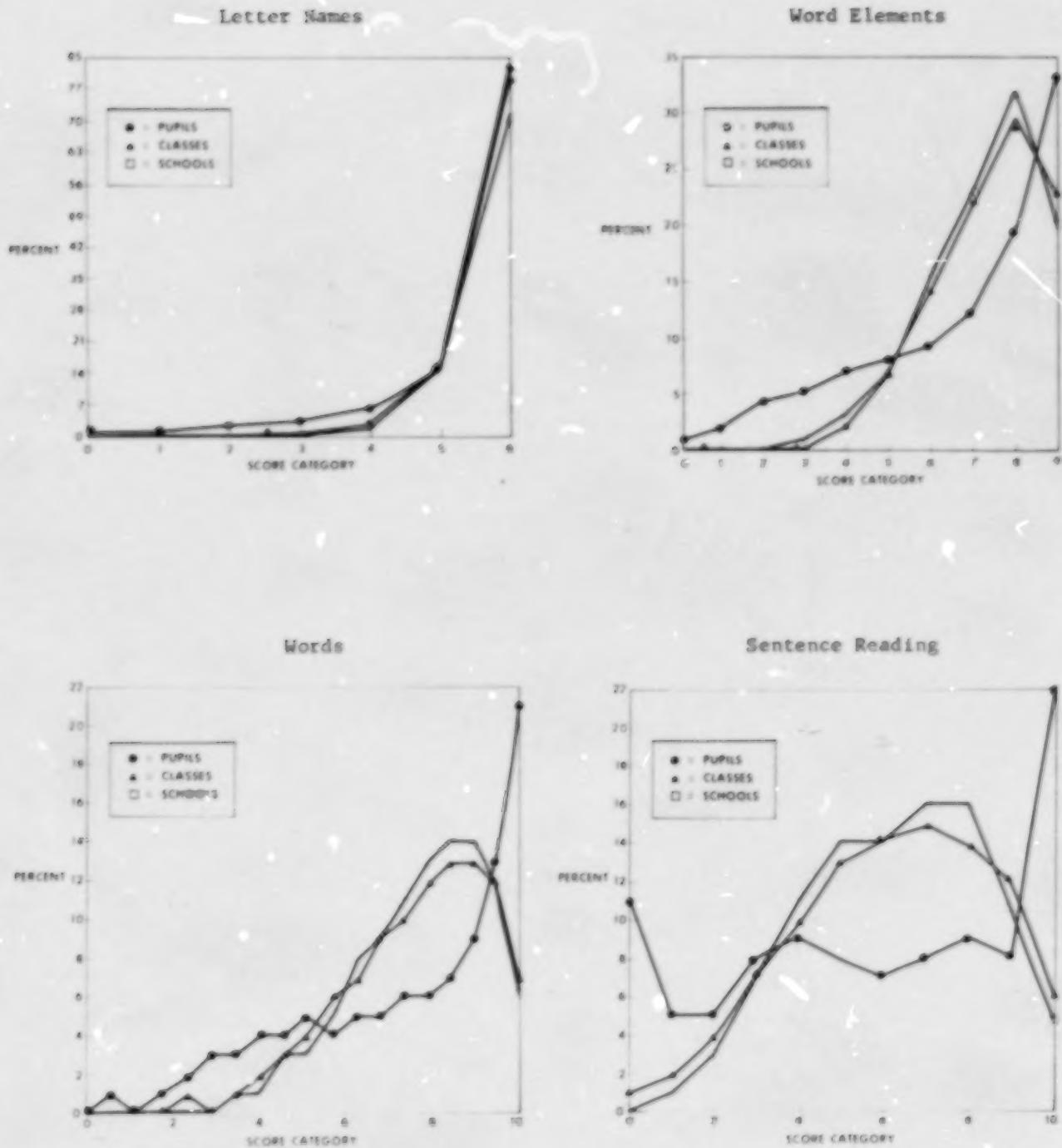


Figure 8. BRP assessment outcome score distributions.

attained only when all pupils receive all program instruction. For the Letter Names outcome this is the situation. This outcome is most heavily emphasized instructionally in the initial BRP units, i.e., 1-3, and virtually all pupils completed these units.

This same reasoning applies to a lesser extent for Word Elements, since instruction on this outcome area extends across more of the program units. For the Words and Sentence Reading outcomes, the assessment data are most sensitive to instruction on later program units. This is especially true of the Sentence Reading outcome and is reflected in the score distributions for it. They approximate a bimodal distribution with large numbers of pupils, classes, and schools obtaining scores at the extremes.

The patterns of proficiency for users in the biosocial characteristic categories on these assessment outcomes are given in Tables 11 to 14. They show some variability around the average for the total sample across these categories. However, the clear impression is that these variations are fairly uniform, i.e., when the interquartile range is larger for one group, it is larger for all groups.

Table 11

BRP Assessment Proficiency by Biosocial Indicators: Letter Names

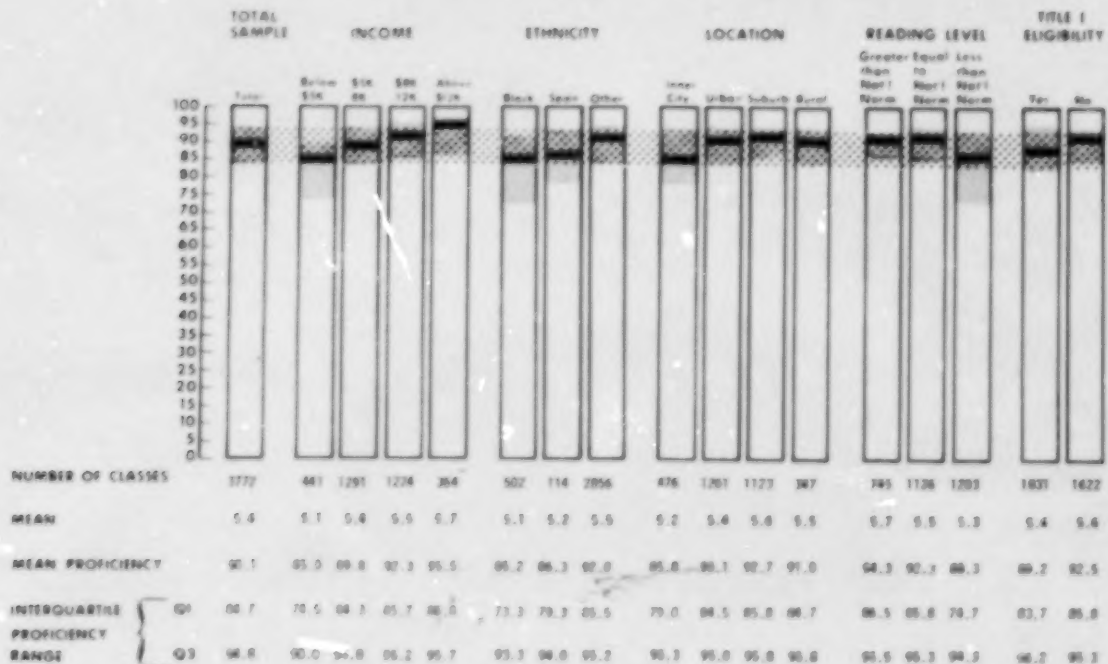


Table 12

BRP Assessment Proficiency by Biosocial Indicators: Word Elements

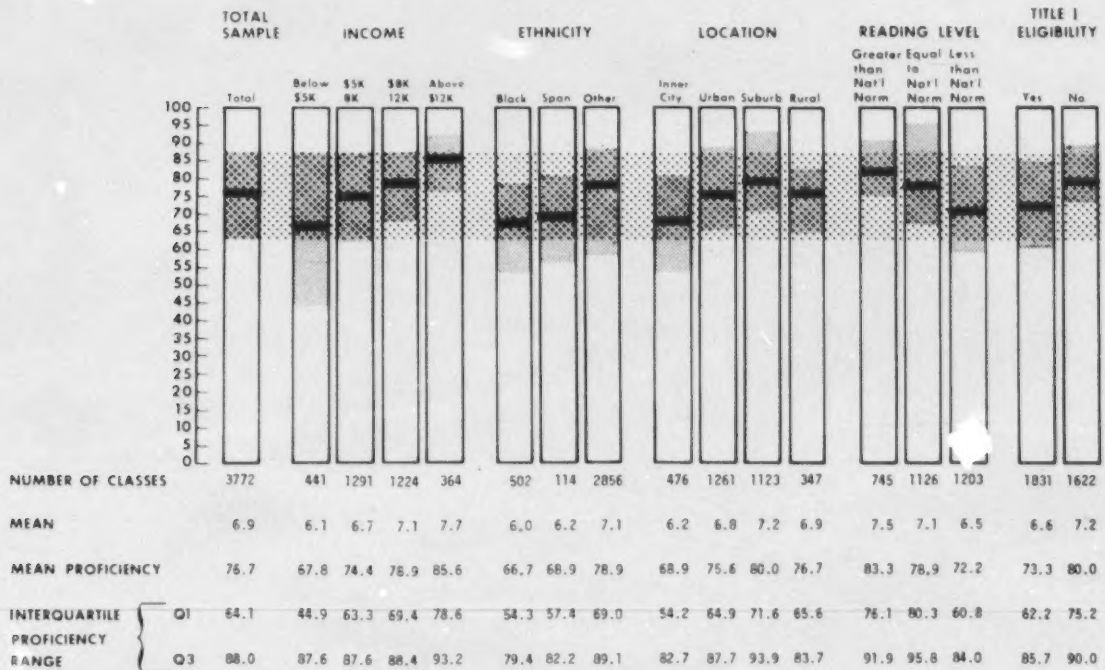


Table 13

BRP Assessment Proficiency by Biosocial Indicators: Words

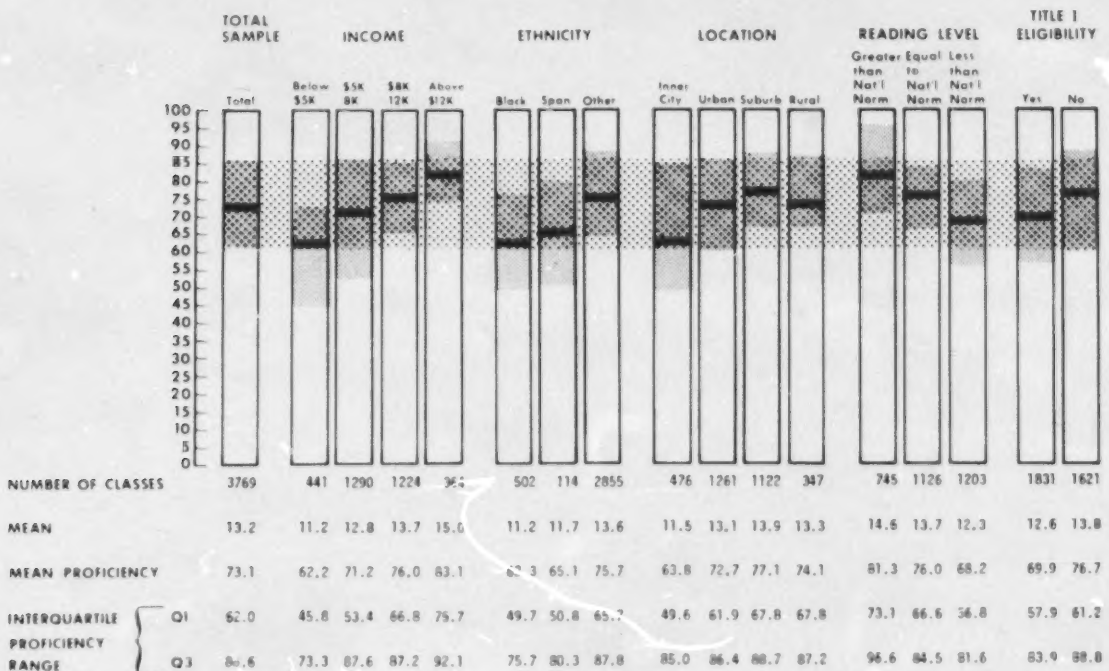
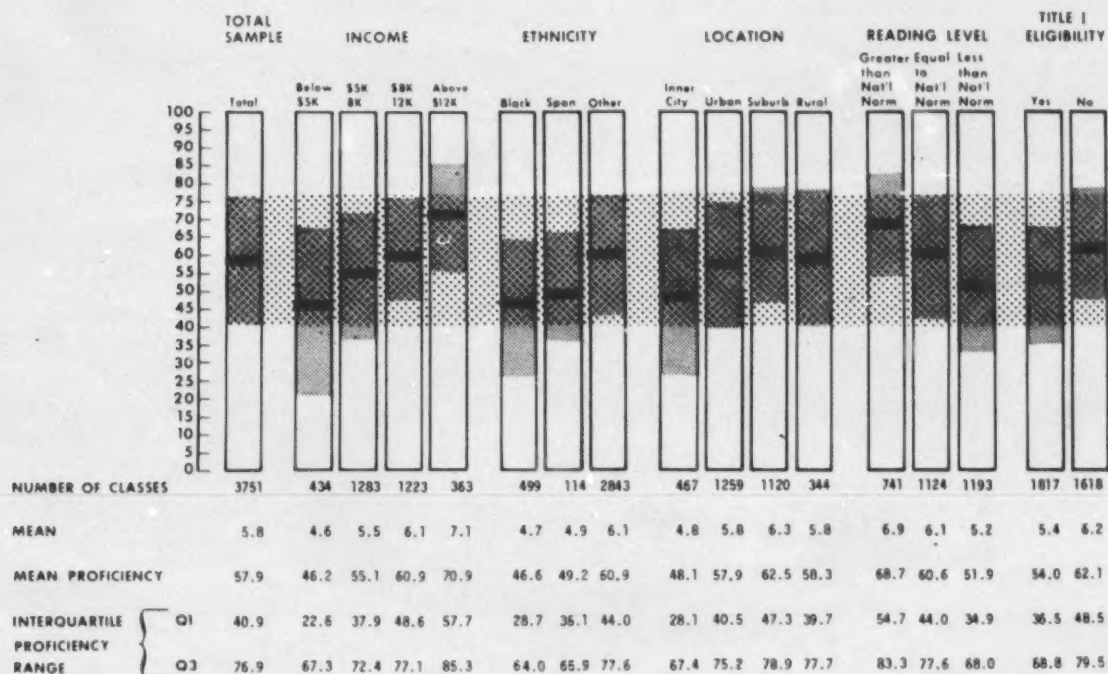


Table 14

BRP Assessment Proficiency by Biosocial Indicators: Sentence Reading

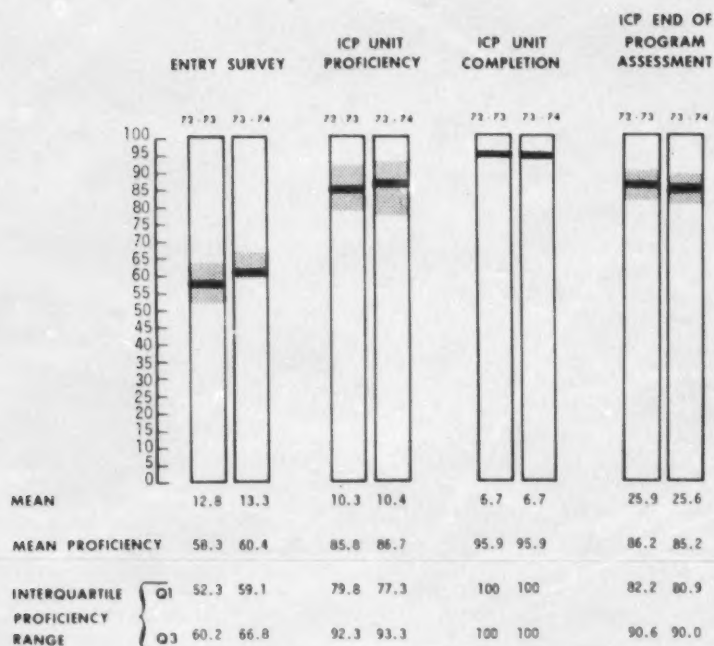


Comparison of Overall Program Completion and Proficiency for 1972-73 and 1973-74

It is useful to compare the level of proficiency on the QA indicators across the two years of the inquiry. In this way, any changes in the overall pattern of attainment can be seen.

The data for ICP are presented in Table 15 and show virtually no change across the two inquiries in terms of the performance indicators. Unit proficiency improved slightly. The average number of units completed was virtually identical, and end-of-program proficiency dropped one percentage point in 1973-74 to 85.2%. Overall, the ICP results differ slightly and unimportantly across the two inquiries.

Table 15
Comparison of ICP Proficiency
Levels for the Two QA Inquiries



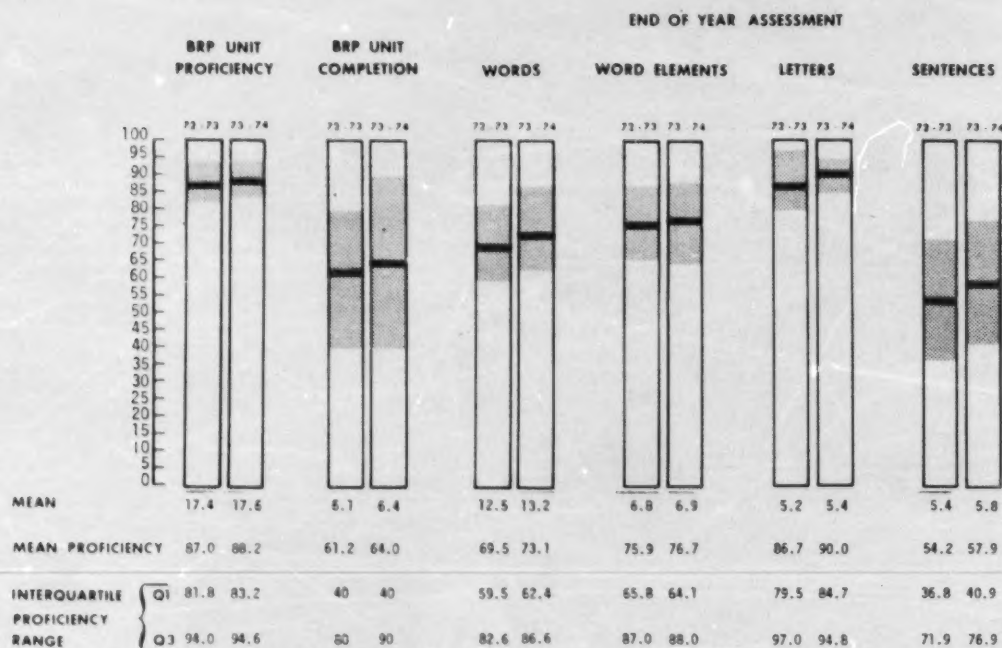
The comparative summary for BRP is given in Table 16 and shows that higher levels were attained in the second-year on each of the indicators. The improvements are regular rather than radical. But in both pacing and performance the 1973-74 data suggest that program usage during the second-year settled down rather than giving any indication of falling apart or the effects evaporating.

RELATIONSHIPS OF SCHOOLING EFFECTS TO PROGRAM USE

These relationships may be most meaningfully interpreted against the backdrop of the quality assurance data from the first-year installation. These data showed that differences in the overall patterns of KP program proficiency and pacing attained were related to the biosocial characteristics of a school pupil population. However, this relationship

Table 16

Comparison of BRP Proficiency Levels for the Two QA Inquiries



did not appear to emanate from either pupil characteristics or those of the program, per se. Rather they were linked to the operational characteristics of program use exercised in different schools. This was the most important finding to emerge from the first-year inquiry because it linked the traditional pattern of biosocial/achievement relationships to operational/instructional procedures under the control of the school rather than to genetic/environmental characteristics of the pupil's family. Thus, the basis for changing achievement performance patterns shifted from the biosocial characteristics of pupils which clearly cannot be manipulated by schools to the operational use of a program that clearly can be manipulated.

The major question for the present inquiry then is twofold: Do the same set of relationships among the biosocial and program use characteristics found in the first inquiry hold in this inquiry or have they changed? Second, what light do the relationships shed on the general question of program use and schooling effects?

Correlations among QA Variables

A first look at the relationship for the 1973-74 inquiry can be found in Table 17, which provides correlations among all the QA indicator variables with the class as the unit of analysis. The highest relationships to the program performance measures for both ICP and BRP are the measures of instructional units completed and the number of instructional days. Next in terms of importance is the Entry Survey and then the biosocial indicators. The matrix reflects a pattern of relationships similar to that found for the first-year inquiry. In fact, the degree of similarity between the two sets of correlations is remarkable. Inspection of the correlation tables for the two years indicates the largest difference between any two matching correlations is .06. In the vast majority of cases, the values lie within .02 of one another. It is important to note that this similarity in correlations confirms the similarity in the ordering of effects across the two inquiries, rather than reflecting in any way the magnitude of the effects across the two years. The matrix further supports the conclusion derived from Tables 15 and 16 that program implementation proceeded orderly, sensibly, and with effects that suggest generally improved operations during the second-year installation.

Table 17

Correlations among QA Indicators

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
National Reading Norms	1	.4054	.3913	.3913	.3913	.3913	.3969	.4214	.4214	.4214	.3718	.2833	.3300	.3071	.3443	.3071	.3443	.3283	.2965	.2965	.2965	.2965
Eligibility for Title I	2	-.311	.4177	.4177	.4177	.4177	.4280	.4389	.4389	.4389	.3879	.2948	.3448	.3194	.3602	.3194	.3602	.3434	.3084	.3084	.3084	.3084
Inner City Location	3	-.291	.277	.4247	.4247	.4247	.4093	.4247	.4247	.4247	.3771	.2844	.3327	.3079	.3470	.3079	.3470	.3327	.2968	.2968	.2968	.2968
Urban Location	4	-.115	-.121	-.399	.4247	.4247	.4093	.4247	.4247	.4247	.3771	.2844	.3327	.3079	.3470	.3079	.3470	.3327	.2968	.2968	.2968	.2968
Suburban Location	5	.347	-.236	-.300	-.549	.4247	.4093	.4247	.4247	.4247	.3771	.2844	.3327	.3079	.3470	.3079	.3470	.3327	.2968	.2968	.2968	.2968
Rural Location	6	.006	.216	-.145	-.265	-.234	.4093	.4247	.4247	.4247	.3771	.2844	.3327	.3079	.3470	.3079	.3470	.3327	.2968	.2968	.2968	.2968
Family Income Level	7	-.506	.422	.350	.035	-.374	.128	.4304	.4304	.4304	.3829	.2902	.3395	.3147	.3551	.3147	.3551	.3400	.3045	.3045	.3045	.3045
Percentage Black	8	.433	-.240	-.387	-.162	.355	.150	-.360	.4555	.4555	.4032	.3071	.3579	.3322	.3742	.3322	.3742	.3571	.3208	.3208	.3208	.3208
Percentage Spanish Surname	9	.216	-.014	-.126	.029	.055	.060	-.169	-.134	.4555	.4032	.3071	.3579	.3322	.3742	.3322	.3742	.3571	.3208	.3208	.3208	.3208
Percentage Other	10	-.502	.223	.431	.179	-.356	-.167	.407	-.852	-.390	.4032	.2754	.3322	.2900	.3445	.2900	.3445	.3196	.2809	.2809	.2809	.2809
Entry Survey Mean Score	11	-.479	.254	.262	.053	-.274	.013	.440	-.314	-.312	.437	.3085	.3650	.3340	.3809	.3340	.3809	.3633	.3236	.3236	.3236	.3236
Number of BRP Instruct. Days	12	-.173	.112	.010	.038	-.113	-.011	.138	-.216	.023	.188	.215	.2920	.3185	.2996	.3185	.2996	.2865	.3078	.3078	.3078	.3078
Number of ICP Instruct. Days	13	.067	-.058	-.044	-.028	.089	-.033	-.071	.076	.123	-.132	-.125	-.118	.3111	.3785	.3111	.3785	.3605	.3004	.3004	.3004	.3004
Number of BRP Units Completed	14	-.224	.094	.116	.006	-.104	-.012	.187	-.229	-.041	.230	.267	.596	-.219	.3235	.3473	.3235	.3085	.3337	.3337	.3337	.3337
Number of ICP Units Completed	15	-.196	.038	.140	.048	-.115	-.068	.122	-.119	-.161	.195	.216	.124	-.004	.218	.3235	.3967	.3768	.3127	.3127	.3127	.3127
BRP Unit Performance	16	-.283	.170	.210	.044	-.189	-.046	.262	-.311	.000	.276	.356	.194	-.005	.107	.073	.3235	.3085	.3337	.3337	.3337	.3337
ICP Unit Performance	17	-.358	.192	.243	.093	-.253	-.025	.313	-.358	-.093	.365	.505	.181	-.034	.213	.053	.609	.3768	.3127	.3127	.3127	.3127
ICP Assessment	18	-.361	.184	.278	.057	-.244	.049	.305	-.332	-.182	.395	.557	.202	-.027	.275	.262	.445	.707	.2997	.2997	.2997	.2997
BRP Assessment - Words	19	-.320	.185	.199	.012	-.139	-.023	.283	-.273	-.041	.259	.410	.480	-.117	.620	.194	.548	.466	.466	.3356	.3356	.3356
BRP Assessment - Word Elements	20	-.303	.186	.189	.017	-.137	-.006	.284	-.258	-.046	.247	.412	.436	-.104	.543	.184	.599	.486	.487	.895	.3356	.3356
BRP Assessment - Letter Names	21	-.267	.168	.188	.014	-.125	-.007	.256	-.250	-.054	.246	.395	.347	-.054	.379	.158	.580	.495	.457	.746	.777	.3356
BRP Assessment - Sent. Read	22	-.289	.172	.163	.008	-.123	-.007	.256	-.212	-.048	.209	.387	.472	-.115	.651	.205	.496	.410	.445	.855	.820	.637

Correlations between the QA variables are given below the diagonal (with decimals omitted) and the number of classes above the diagonal.

BRP Units Completed and End-of-Year Proficiency

The data on this set of basic program relationships are presented separately by outcome and biosocial characteristic categories. Table 18 and Figure 9 provide the data for the outcome of Letter Names. The pattern displayed for the total sample on this outcome very accurately describes the results displayed for all the biosocial characteristic categories. Average proficiency is quite high even for pupils only completing one unit of the program, and while the proficiency level increases slightly across unit completion categories, the relative increase is nominal. The result is best interpreted in terms of the following considerations: 1) the entering proficiency of pupils, i.e., most pupils know at least some letters; 2) normal instructional emphasis given to this outcome, i.e., letter names have traditionally been taught to pupils in kindergarten and thus teachers are generally quite willing, able, and motivated to teach them; 3) the structure of BRP, i.e., most instruction on letter names is accomplished as part of the first several units of the program. Therefore, little changes in proficiency should be expected across unit completion categories, as this data indicates.

TABLE 18

BRP Assessment Proficiency by Units Completed: Letter Names*

	UNITS COMPLETED									
	1	2	3	4	5	6	7	8	9	10
<u>Total Sample:</u>	4.8/51	4.9/205	5.2/309	5.3/319	5.4/362	5.5/368	5.6/413	5.6/380	5.7/467	5.7/463
<u>Ethnic Groups:</u>										
Black	4.5/16	4.7/59	5.1/62	4.9/49	5.3/55	5.4/42	5.4/40	5.4/24	5.5/37	5.4/35
Spanish	3.9/3	5.0/5	4.9/10	5.1/8	5.3/12	5.1/12	5.4/13	5.5/11	5.7/10	5.5/11
Other	5.0/32	4.9/134	5.3/224	5.4/246	5.4/284	5.5/303	5.6/346	5.7/329	5.7/410	5.7/410
<u>Income Level:</u>										
< 5,000	4.4/11	4.5/48	5.0/53	5.1/43	5.2/43	5.2/35	5.4/23	5.4/24	5.4/48	5.5/26
5-8,000	4.8/25	5.0/72	5.2/115	5.3/128	5.4/112	5.5/113	5.5/147	5.6/126	5.7/137	5.6/156
8-12,000	5.1/7	5.1/44	5.2/90	5.4/94	5.4/141	5.6/137	5.6/154	5.6/135	5.7/156	5.7/171
> 12,000		5.2/6	5.5/13	5.6/21	5.6/26	5.6/39	5.8/53	5.8/53	5.9/66	5.8/59
<u>Title I Eligibility:</u>										
Yes	4.6/30	4.8/128	5.1/157	5.2/167	5.4/179	5.5/167	5.5/203	5.6/154	5.6/187	5.6/227
No	5.1/19	5.1/53	5.3/134	5.4/132	5.4/151	5.5/163	5.6/182	5.7/193	5.8/235	5.8/202
<u>Reading Level:</u>										
Above	4.6/1	5.3/12	5.4/38	5.5/44	5.5/60	5.6/84	5.7/87	5.7/94	5.8/124	5.8/148
At	5.3/10	5.2/42	5.3/85	5.4/87	5.5/100	5.6/109	5.6/140	5.7/115	5.7/166	5.7/150
Below	4.7/20	4.9/90	5.1/121	5.2/136	5.3/131	5.4/114	5.5/120	5.5/115	5.5/118	5.5/107
<u>Location:</u>										
Inner City	4.3/12	4.7/49	5.0/52	5.2/33	5.2/44	5.4/47	5.5/34	5.4/21	5.4/63	5.3/42
Urban	4.9/25	5.0/57	5.2/99	5.2/110	5.4/130	5.5/121	5.6/135	5.6/128	5.7/148	5.7/163
Suburban	5.1/6	5.1/49	5.3/74	5.4/84	5.4/93	5.5/120	5.6/155	5.7/151	5.7/160	5.7/146
Rural	5.3/3	4.9/12	5.0/32	5.4/31	5.4/30	5.4/29	5.5/40	5.7/35	5.8/39	5.8/51

*Table entries show: mean/number of classes.

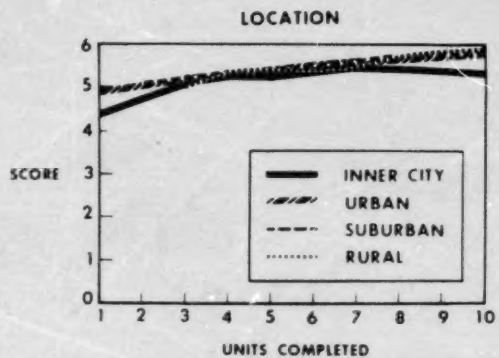
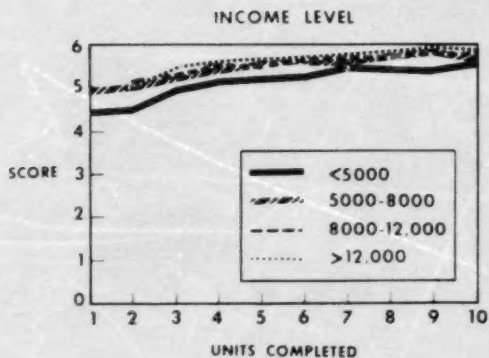
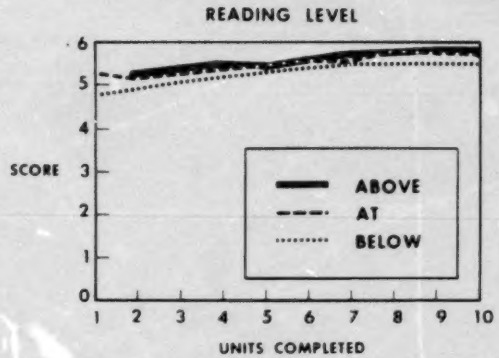
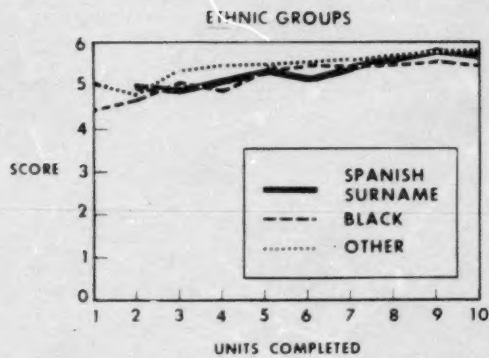
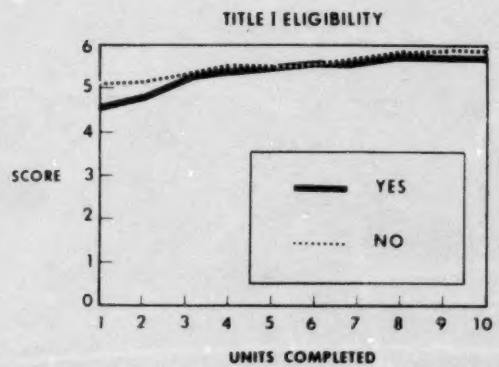
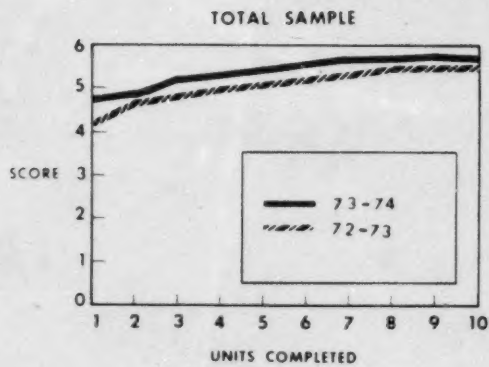


Figure 9. BRP assessment proficiency by units completed:
Letter Names.*

*Figure points based on a small number of classes (less than 6) have been omitted.

Comparative information on this relationship for the total samples across the two years of the KP-QA inquiries is also shown here. The data on the total sample for 1972-73 are presented in the same section of Table 18 and area of Figure 9 as that for the 1973-74 classes. They show that the proficiency on the Letter Names outcome is slightly higher in all cases in 1973-74, i.e., for all categories of unit completion. A close examination of the results by biosocial categories for the two inquiries shows where the actual gains occurred. They occurred only among the categories with the lowest levels of average proficiency, which must be the case since the other categories were virtually at the maximum value. Regular increases for pupils in the minority ethnic groups, lower income levels, Title I eligible schools, schools reading below the national norms, and those from areas described as urban and for inner city, can be observed in outcome proficiency. The extent to which these changes may represent a statistical artifact must await the results of the third-year of installation. However, the performance itself is certainly not artificial, and there is currently every reason to conclude that it reflects implementation characteristics rather than other effects.

Examination of the second BRP assessment outcome, Word Elements (Table 19 and Figure 10), shows that once again there is an overall pattern of increasing proficiency with units completed. Here the slope of the

TABLE 19

BRP Assessment Proficiency by Units Completed: Word Elements*

	UNITS COMPLETED									
	1	2	3	4	5	6	7	8	9	10
<u>Total Sample:</u>	4.9/51	5.2/205	5.9/309	6.3/319	6.7/362	7.0/368	7.3/413	7.5/380	7.7/467	7.7/463
<u>Ethnic Groups:</u>										
Black	4.8/16	5.1/59	5.6/62	5.7/49	6.5/35	6.8/42	6.8/40	7.0/24	7.1/37	6.8/35
Spanish	3.7/3	4.3/5	4.0/10	6.2/8	6.1/12	6.8/12	6.7/13	7.3/11	7.3/10	7.3/11
Other	5.1/32	5.3/134	6.1/224	6.4/246	6.8/284	7.1/303	7.4/346	7.6/329	7.7/410	7.7/410
<u>Income Level:</u>										
< 5,000	4.3/11	4.8/48	5.4/53	6.0/43	6.3/43	6.4/35	6.8/23	7.2/24	6.8/48	6.9/26
5-8,000	5.0/25	5.3/72	5.7/115	6.3/128	6.5/112	7.2/113	7.1/147	7.5/126	7.6/137	7.4/156
8-12,000	5.4/7	5.6/44	6.1/90	6.3/84	6.8/141	7.1/137	7.4/134	7.5/135	7.7/156	7.7/171
> 12,000		5.7/6	6.3/13	6.6/21	7.0/26	7.2/39	7.9/53	7.9/53	8.2/46	8.1/39
<u>Title I Eligibility:</u>										
Yes	4.8/30	5.2/128	5.7/157	6.2/167	6.5/179	7.1/167	7.2/203	7.4/156	7.4/187	7.3/227
No	5.4/19	5.5/53	6.1/134	6.5/132	6.8/151	7.0/165	7.5/182	7.7/193	7.9/235	8.0/202
<u>Reading Level:</u>										
Above	4.7/1	6.1/12	6.4/38	6.6/44	7.2/60	7.5/84	7.6/87	7.7/94	8.0/124	8.0/168
At	5.5/10	5.6/42	6.1/85	6.4/87	6.8/100	7.2/109	7.5/140	7.7/115	7.8/166	7.7/150
Below	4.6/20	5.3/90	5.8/121	6.2/136	6.3/131	6.8/114	7.0/120	7.2/115	7.2/118	7.1/107
<u>Location:</u>										
Inner City	4.7/12	5.0/49	5.5/54	6.1/33	6.2/44	6.7/47	7.1/34	7.3/21	7.1/63	6.8/42
Urban	5.1/25	5.6/37	5.9/99	6.2/110	6.6/130	7.0/121	7.2/135	7.6/128	7.6/148	7.7/163
Suburban	5.0/6	5.4/49	6.2/74	6.5/84	6.8/93	7.1/120	7.4/135	7.6/151	7.8/160	7.8/166
Rural	5.7/3	5.8/12	5.7/32	6.4/31	6.9/30	7.0/29	7.3/40	7.4/35	7.8/39	7.5/51

*Table entries show: mean/number of classes.

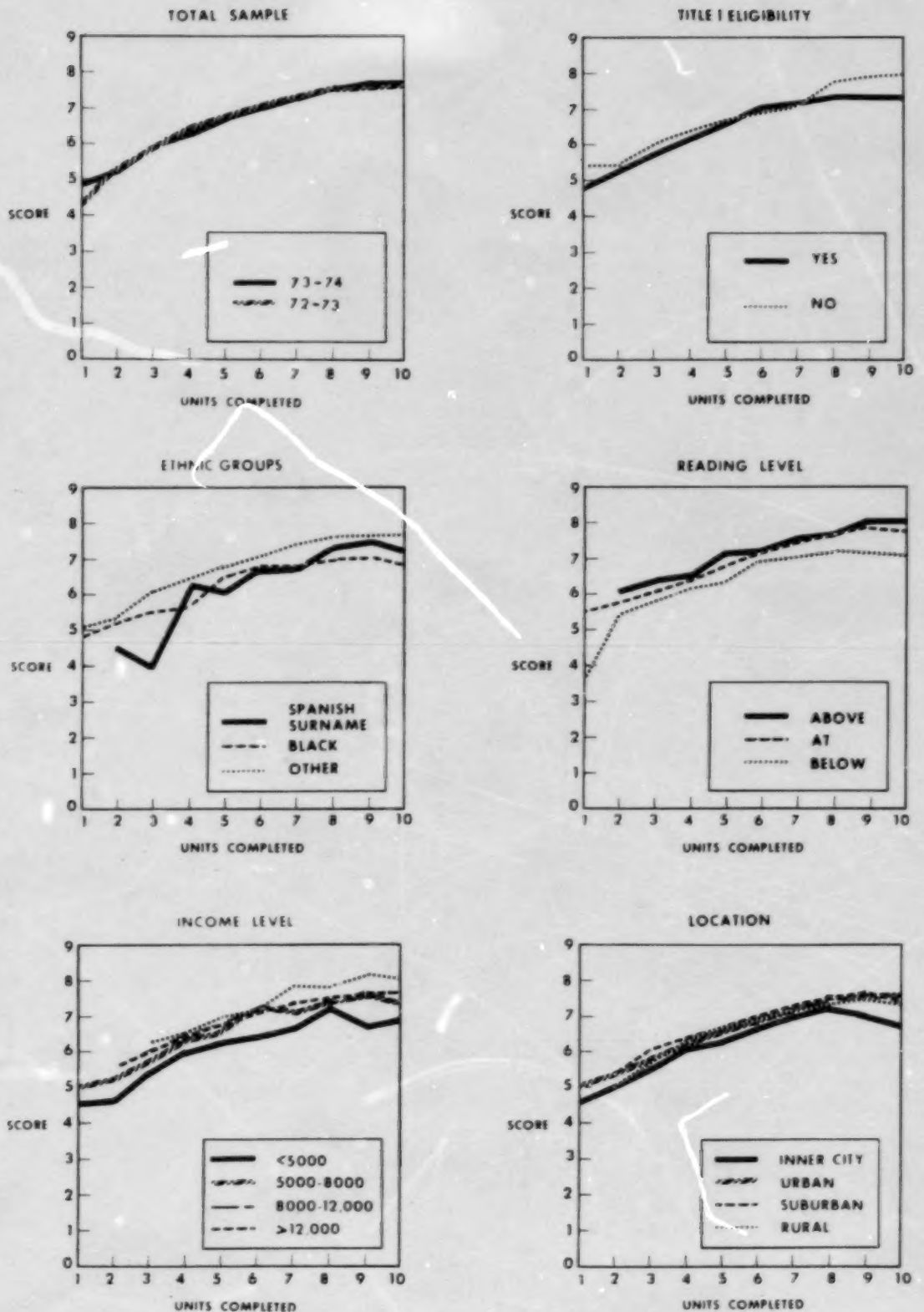


Figure 10. BRP assessment proficiency by units completed:
Word Elements.*

*Figure points based on a small number of classes (less than 6) have been omitted.

proficiency line increases more sharply, with slightly greater increments associated with each unit completion category than for letter names. Also, the comparative data show a slight increase in overall proficiency across the two years. In each unit-completed category, average proficiency in 1973-74 either exceeded or equalled the level attained in 1972-73. Once again, the greatest increases occurred in the user categories that had the lowest proficiency levels.

The data for the Words outcome (Table 20, Figure 11) show a regular pattern of increasing proficiency with increasing units completed. These data differ from those on the Letter Names and Word Elements outcomes in several ways that are understandable in the context of the program's instructional architecture and the properties of the outcome assessment. The program provides instruction on the program words domain across all units. Therefore, substantial increments in proficiency should be apparent as the number of units completed increase. Second, because of the size of the total domain of program words and the presumed heterogeneity in outcome proficiency expected due to differential amounts of instruction delivered, a larger sample of items was included on this indicator (N=18). These two considerations lead to greater variability across unit completion groups and hence a sharper slope in the proficiency line (Figure 11).

TABLE 20

BRP Assessment Proficiency by Units Completed: Words*

	UNITS COMPLETED									
	1	2	3	4	5	6	7	8	9	10
<u>Total Sample:</u>	8.6/51	9.1/205	10.8/309	11.7/318	12.4/362	13.4/368	14.2/413	14.9/378	15.2/467	15.3/463
<u>Ethnic Groups:</u>										
Black	8.1/16	8.7/59	10.2/62	10.4/49	11.6/55	12.9/42	13.3/40	14.2/24	14.1/37	13.6/35
Spanish	6.6/3	8.1/5	7.4/10	10.1/8	11.4/12	12.7/12	12.7/13	14.6/11	15.4/10	14.3/11
Other	9.1/32	9.3/134	11.2/224	11.9/245	12.6/284	13.5/303	14.4/346	14.9/327	15.3/410	15.5/410
<u>Income Level:</u>										
< 5,000	6.9/11	8.2/48	9.7/53	11.0/43	11.4/43	12.2/35	13.2/23	14.4/24	13.5/48	13.5/26
5-8,000	9.0/25	9.3/72	10.5/115	11.5/127	12.2/112	13.6/113	13.8/147	14.6/126	15.1/137	14.8/156
8-12,000	9.2/7	9.5/44	11.4/90	12.1/94	12.5/141	13.4/137	14.3/154	14.7/135	15.4/156	15.3/171
> 12,000		10.1/6	12.3/13	12.3/21	12.9/26	13.7/39	15.5/53	15.9/53	16.4/66	16.2/59
<u>Title I Eligibility:</u>										
Yes	8.1/30	8.9/128	10.5/157	11.4/167	12.1/179	13.4/167	13.8/203	14.6/154	14.6/187	14.7/227
No	9.7/19	9.9/53	11.2/134	12.2/131	12.6/151	13.4/165	14.6/182	15.1/193	15.7/235	15.9/202
<u>Reading Level:</u>										
Above	6.8/1	12.1/12	12.0/38	12.3/44	13.3/60	13.7/84	14.7/87	15.3/94	16.0/124	16.11/148
At	10.2/10	10.0/42	11.2/85	11.9/87	12.7/100	13.7/109	14.6/140	15.2/115	15.4/166	15.5/150
Below	8.0/20	8.7/90	10.5/121	11.4/136	11.7/131	12.8/114	13.4/120	14.2/115	14.3/118	14.3/107
<u>Location:</u>										
Inner City	8.2/12	8.5/49	9.8/52	11.0/33	11.3/44	12.4/47	13.6/34	14.5/21	14.0/63	13.6/42
Urban	8.7/25	9.1/57	11.0/99	11.5/110	12.2/130	13.5/121	14.1/135	14.7/128	15.1/148	15.4/163
Suburban	9.1/6	9.6/49	11.3/74	12.1/83	12.7/93	13.6/120	14.4/155	15.0/151	15.6/160	15.6/148
Rural	10.8/3	9.1/12	10.6/32	11.7/31	13.1/30	13.2/29	14.0/40	14.9/35	15.6/39	15.1/51

*Table entries show: mean/number of classes.

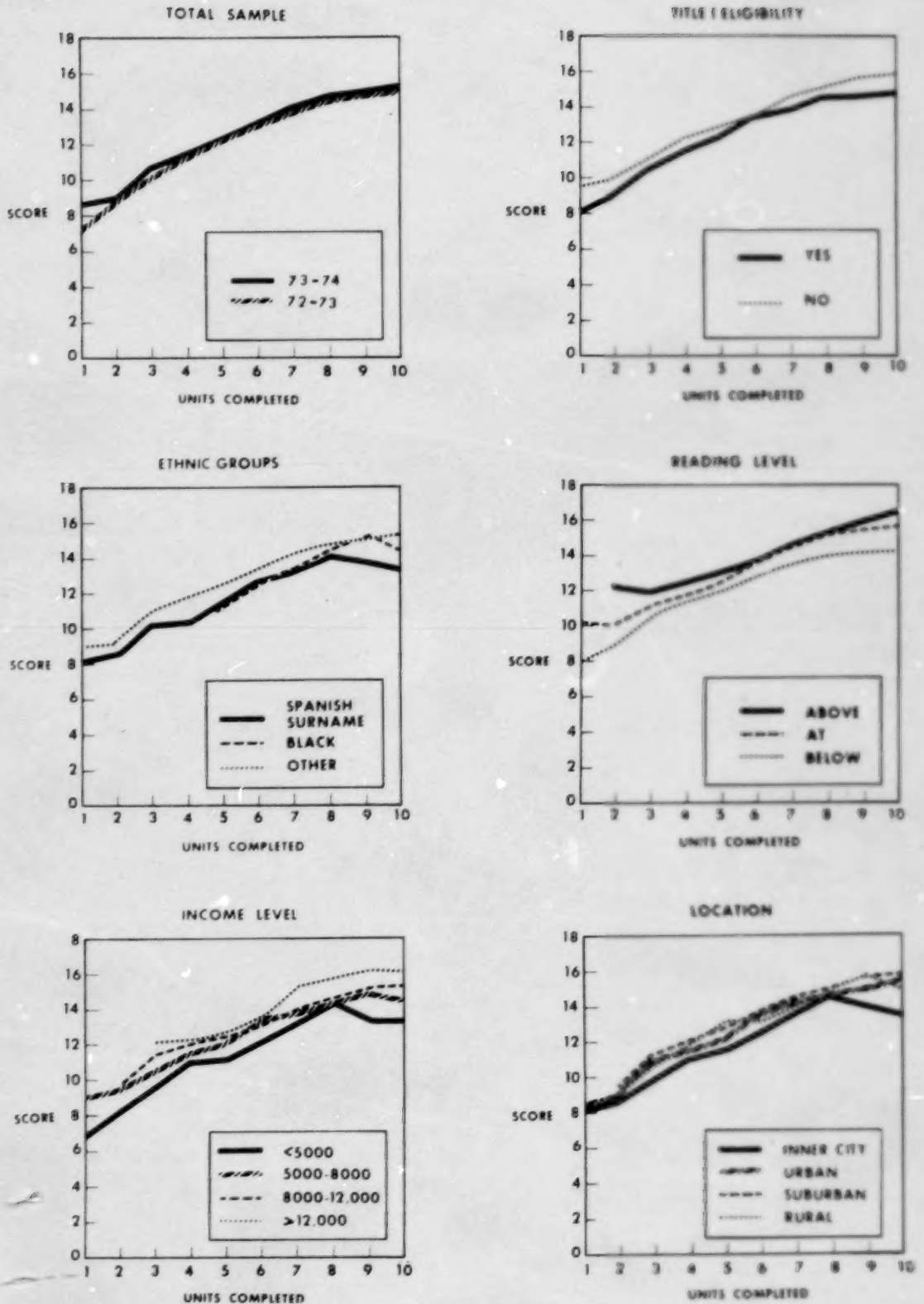


Figure 11. BRP assessment proficiency by units completed:
Words.*

*Figure points based on a small number of classes (less than 6) have been omitted.

The variability and sensitivity of this indicator are reflected in the comparative data on it (also illustrated in Figure 12) from the two KP-QA inquiries. The same pattern observed for the other outcome areas is evident, with a general overall increase in outcome proficiency for the total sample of classes, due primarily to gains in the lowest scoring biosocial categories based on the 1972-73 data. The net effect is a reduction in the proficiency variability within the units-completed categories across the various biosocial categories.

Data for the Sentence Reading outcome are presented in Table 21 and Figure 12. They show virtually the same pattern as the Words outcome. For the Sentence Reading outcome the scoring criterion for an item is strict, i.e., a pupil must read all words of a sentence correctly to receive credit. Coupled with the fairly even distribution across the program of instructional emphasis on sentence elements, this produces a proficiency line across unit-completion categories that has a rather steep linear slope.

The sensitivity of this outcome indicator to the effects of schooling/instruction is remarkable from a technical measurement perspective. The indicator is sensitive to instructional increments at all levels, and the changes in proficiency associated with instructional increments are close to equal.

TABLE 21

DRP Assessment Proficiency by Units Completed: Sentence Reading*

	UNITS COMPLETED									
	1	2	3	4	5	6	7	8	9	10
Total Sample:	2.1/49	2.8/200	3.9/308	4.6/319	5.3/339	6.1/388	6.4/413	7.1/380	7.4/403	7.4/443
Ethnic Groups:										
Black	2.1/16	3.5/37	3.7/41	4.3/49	5.2/53	6.2/43	6.0/40	6.7/34	6.7/37	6.3/35
Spanish	.5/3	2.3/3	3.4/10	4.6/8	6.7/12	5.0/13	5.7/13	6.8/11	7.3/10	6.1/11
Other	2.2/30	3.0/131	4.0/224	4.6/246	5.3/281	6.1/303	6.3/346	7.1/329	7.3/408	7.6/410
Income level:										
< 5,000	1.8/11	2.5/46	3.7/32	4.6/43	4.7/43	5.6/35	5.6/23	6.9/24	6.3/46	6.4/38
5-8,000	1.9/23	2.6/70	3.7/115	4.3/128	5.1/110	6.2/113	6.3/147	7.0/126	7.2/137	7.0/156
8-12,000	2.4/7	3.2/44	3.9/90	4.6/96	5.3/141	6.1/137	6.6/156	7.0/133	7.3/136	7.6/171
> 12,000		3.9/8	4.4/13	4.9/21	5.5/25	6.2/39	7.4/53	8.0/53	8.2/48	8.1/59
Table 1 Reliability:										
Yes	1.8/30	2.8/124	3.7/136	4.5/167	5.1/177	6.2/167	6.2/205	6.8/156	6.9/185	6.9/227
No	2.5/17	3.0/32	4.0/136	4.8/132	5.3/150	6.0/165	6.6/182	7.4/193	7.8/233	7.9/202
Reading Level:										
Above	2.8/1	3.8/11	4.3/38	4.8/44	5.9/59	6.3/86	6.9/87	7.4/96	8.0/134	8.1/168
At	2.6/10	2.8/42	3.9/85	4.3/87	5.1/100	6.2/109	6.7/140	7.3/115	7.3/166	7.5/150
Below	1.8/20	2.8/86	3.8/120	4.3/136	4.9/129	5.7/114	5.8/120	6.8/115	6.4/116	6.7/107
Location:										
Inner City	1.8/12	2.5/46	3.5/31	4.7/33	4.8/42	5.7/67	6.1/36	7.1/21	6.7/61	6.3/42
Urban	2.2/23	2.9/57	4.1/99	4.4/110	5.2/130	6.1/121	6.3/133	7.0/128	7.2/148	7.3/163
Suburban	2.1/8	3.0/47	4.0/74	4.7/84	5.4/95	6.0/120	6.5/159	7.3/151	7.6/160	7.7/166
Rural	3.0/3	3.3/12	3.5/31	4.4/31	5.5/30	5.8/29	6.4/40	6.9/35	7.7/39	8.9/51

*Table entries show: mean/number of classes.

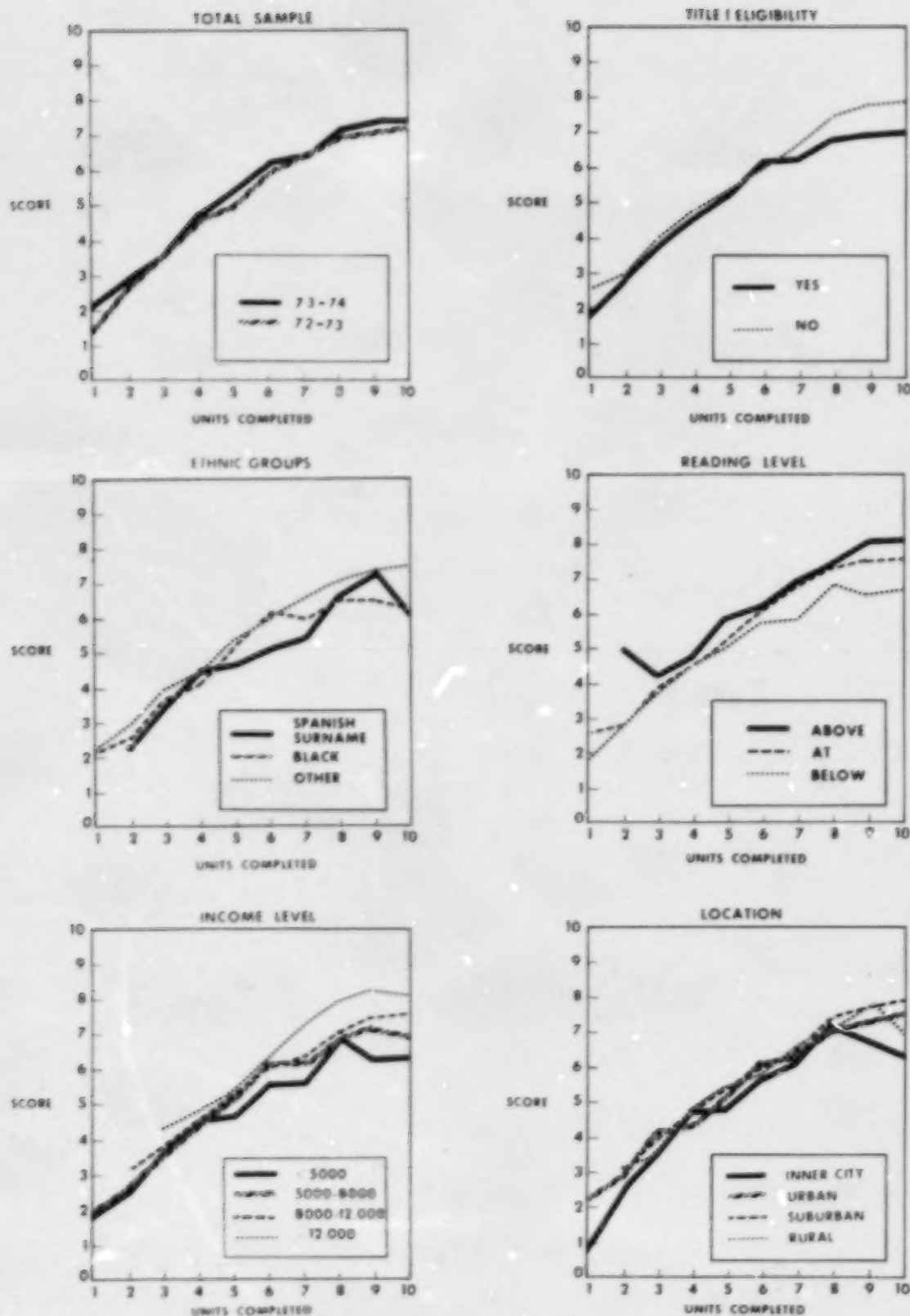


Figure 12. BRP assessment proficiency by units completed:
Sentence Reading.*

*Figure printed based on a small number of cases (less than 10) have been omitted.

Examination of the data from 1972-73 against that of 1973-74 (Figure 13) for Sentence Reading shows a pattern of increasing proficiency for the set of user categories. Proficiency for the 1973-74 users is again equal or higher in every category of program use.

Units Completed and Instructional Time

An important implication from the first-year inquiry is the relevance of instructional time (measured in calendar days) in determining the amount of instruction pupils receive (measured in units completed). The data in Table 22 and Figure 13 indicate that this same condition exists for the current inquiry. There is a very strong relationship between number of instructional days and units completed, which holds across all the user characteristic categories with no exceptions. These data suggest further that the amount of time required to complete a unit in terms of calendar days is fairly constant across all user groups, indicating considerable program robustness over a variety of school situations.

Figure 13 also gives data from the total sample in the 1972-73 inquiry on instructional days and units completed. These data show that the pattern observed in the second-year inquiry is almost identical to that observed in the first-year installation, indicating considerable stability in this relationship.

TABLE 22
BRP Instructional Days by Units Completed*

	UNITS COMPLETED									
	1	2	3	4	5	6	7	8	9	10
<u>Total Sample:</u>	47/16	58/182	81/261	102/296	113/329	128/333	133/391	145/360	163/438	154/454
<u>Ethnic Groups:</u>										
Black	68/7	31/34	77/57	91/47	103/54	121/40	117/40	126/34	147/31	134/36
Spanish	49/7	64/12	124/9	104/11	154/11	134/10	164/11	169/9	184/11	
Other	33/8	64/101	85/173	103/210	117/227	130/255	135/316	148/297	164/380	156/295
<u>Income Level:</u>										
< 5,000	63/4	60/44	80/53	116/41	106/48	135/37	139/25	140/24	151/41	154/28
5-8,000	23/5	61/34	85/95	93/121	115/100	126/102	130/139	147/118	142/137	152/156
8-12,000	65/5	60/37	80/73	107/78	114/126	131/117	129/143	140/132	158/144	148/168
> 12,000	78/6	81/11	106/20	129/23	132/36	139/49	155/47	168/63	158/52	
<u>Title I Eligibility:</u>										
Yes	49/7	61/114	81/137	98/155	111/167	125/156	132/190	141/145	155/177	149/227
No	50/8	36/31	82/114	105/119	119/134	135/143	131/172	150/184	164/220	155/193
<u>Reading Level:</u>										
Above		61/11	72/32	104/37	122/50	127/74	129/80	148/83	169/116	161/141
At	60/2	64/38	90/49	97/77	117/88	139/101	136/131	150/114	161/155	154/146
Below	39/6	35/81	81/105	104/131	112/123	119/106	131/115	145/107	158/115	149/107
<u>Location:</u>										
Inner City	33/5	67/44	82/42	116/36	104/43	126/48	122/36	133/18	159/54	149/43
Urban	48/9	52/35	77/88	92/101	117/121	137/108	125/126	146/123	160/145	147/162
Suburban	49/1	61/41	88/60	112/73	118/78	132/101	142/146	149/145	160/147	153/136
Rural		62/13	77/31	101/33	120/30	115/28	135/37	143/32	160/38	164/34

*Table entries show: mean/number of classes.

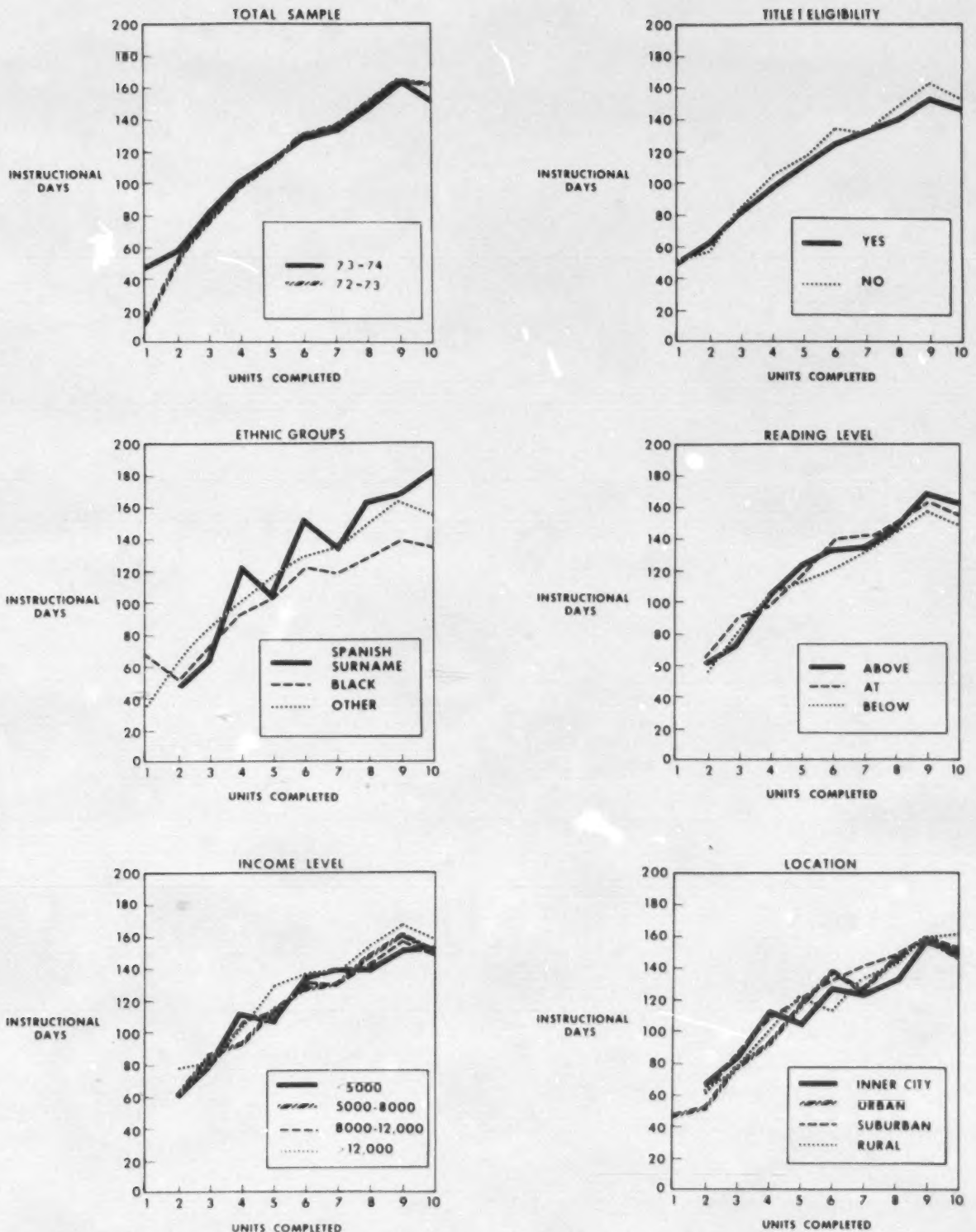


Figure 13. BRP instructional days by units completed.*

*Figure points based on a small number of classes (less than 6) have been omitted.

Instruction Received as a Function of Entering Proficiency

The relationship between units completed and number of instructional days spent by classes with different Entry Survey score categories is crucial in understanding the overall effectiveness of the program and more importantly the patterns of use in the different characteristic categories. The data on units completed are presented in Table 23 and illustrated in Figure 14. The overall pattern shows a moderate increase in units completed across Entry Survey categories. More revealing than the overall trend, however, is the pattern this relationship displays within user characteristic categories. Those categories that typically display lower levels of reading proficiency, i.e., minority groups, ESEA Title I eligible schools, lower income levels, urban and inner city locations, show a strong relationship between Entry Survey level and units completed. Users in the categories with typically higher reading proficiency show little or no relationship between entering level and units completed.

The tendency was noted in the first-year installation for some children to get taught and for others with equal entering proficiency who happen to be in different situations to get caught instructionally. The interesting aspect of this tendency is that the children generally held to be "advantaged" are those taught and children alleged to be "disadvantaged" are those caught. This fact is most clearly illustrated

TABLE 23

BRP Units Completed by Entry Survey Score Categories*

	ENTRY SURVEY SCORE CATEGORIES								
	<9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	>16
Total Sample:	4.3/60	5.6/89	5.7/186	5.4/373	6.1/538	6.4/693	6.8/591	7.1/386	7.7/283
Ethnic Groups:									
Black	3.7/17	5.1/41	5.3/79	4.6/93	5.2/99	5.4/46	5.8/30	6.9/9	6.5/3
Spanish	4.7/23	6.4/13	5.4/9	4.9/15	6.4/18	8.3/9	6.8/6	6.3/3	7.3/4
Other	4.3/10	6.2/31	6.2/86	5.7/247	6.3/410	6.5/62	6.9/545	7.1/363	7.8/246
Income Level:									
< 5,000	4.2/29	5.3/42	5.1/56	4.7/82	5.8/74	6.0/42	6.0/25	5.6/12	6.4/15
5-8,000	4.1/28	5.7/42	5.7/98	5.7/195	5.9/232	6.5/255	6.8/172	7.4/82	7.8/37
8-12,000	6.5/2	6.7/3	6.4/18	5.3/63	6.5/191	6.4/301	6.7/277	6.9/166	7.7/96
> 12,000			5.0/1	6.0/5	5.6/21	6.7/44	7.8/66	7.3/99	7.8/95
Title I Eligibility:									
Yes	4.3/52	5.3/68	5.7/143	5.4/229	6.1/307	6.4/341	6.7/254	6.9/135	7.6/85
No	4.3/7	6.5/20	5.4/38	5.3/125	6.1/218	6.4/318	6.8/318	7.1/235	7.6/183
Reading Level:									
Above		10.0/1	7.7/3	6.2/18	6.5/54	7.1/124	7.4/170	7.5/162	7.7/145
At	4.0/3	7.2/10	6.4/32	5.4/64	6.7/167	6.4/301	6.7/219	6.9/124	7.8/86
Below	6.5/26	5.8/48	5.8/100	5.5/225	5.6/249	6.1/208	6.1/138	6.4/68	7.3/33
Location:									
Inner City	3.2/21	5.2/42	5.9/78	5.2/88	5.5/64	6.4/51	6.8/31	7.1/18	7.9/13
Urban	4.8/17	6.1/26	4.9/64	5.3/152	6.1/227	6.6/256	6.8/199	7.2/122	7.6/79
Suburban	6.7/10	6.7/10	6.9/22	5.7/69	6.5/147	6.3/237	6.9/240	7.1/162	7.8/137
Rural	3.3/8	3.9/7	5.6/15	6.2/36	6.2/69	6.8/86	6.9/49	7.2/32	7.9/8

*Table entries show: mean/number of classes.

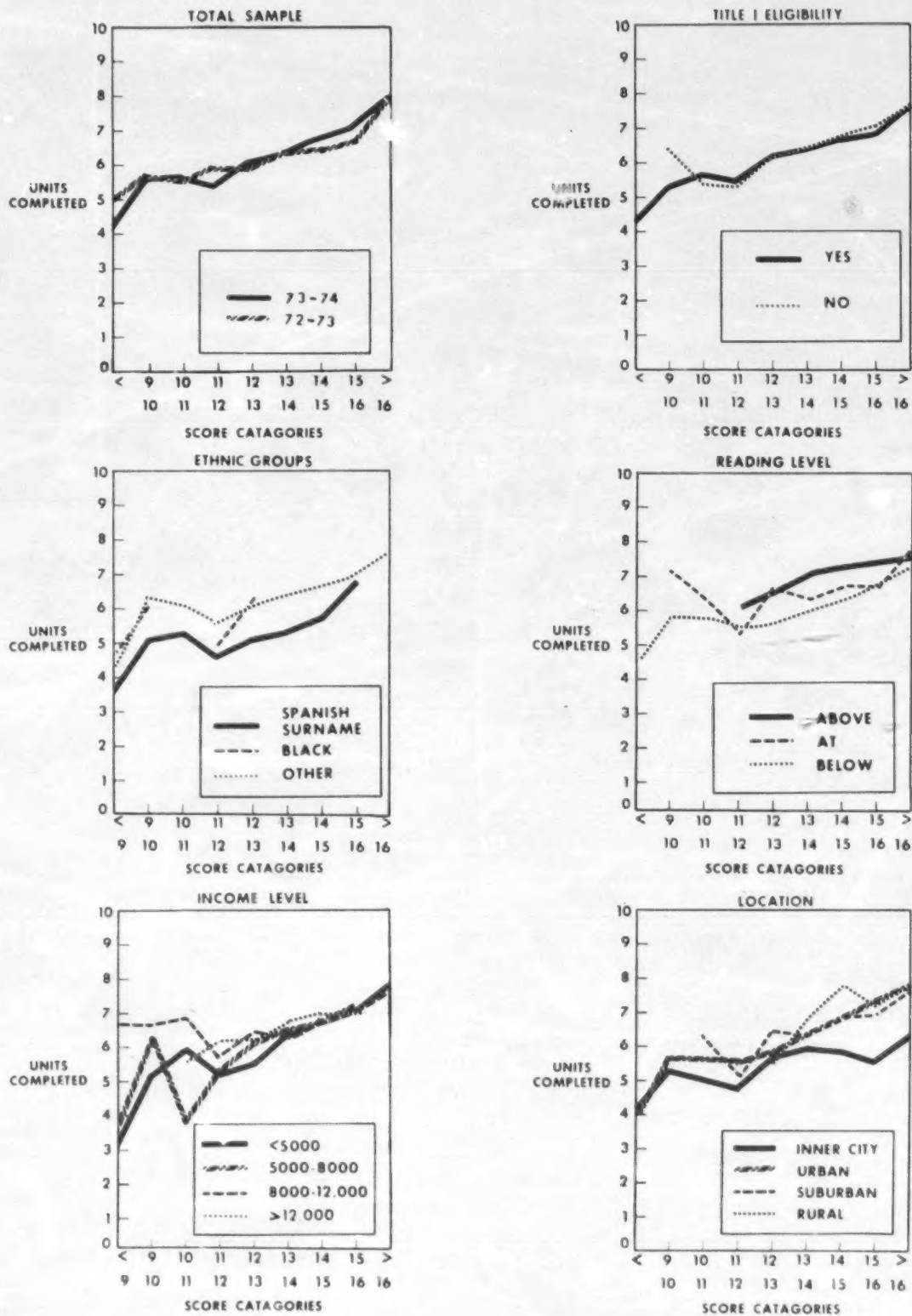


Figure 14. BRP units completed by Entry Survey score categories.*

*Figure points based on a small number of classes (less than 6) have been omitted.

by the school location data. Classes in "suburban" areas from all Entry Survey score categories tend to complete between 6 and 7 units. By way of contrast, for "inner city" locations the figure ranges from 3.2 to 7.9 units across entry survey categories. This represents substantial differences (over 3 units) in the amount of instruction delivered. On the basis of these findings, the attainment of educational equality is not nearly so abstract and nebulous an aspiration for the future as it has been in the past.

Figure 14 also includes comparative data on this relationship for the overall samples of the two inquiry years. These data show a slight shift in this relationship across the two years, with the 1973-74 classes in the higher Entry Survey categories completing more units on the average and those in the lower categories about the same as the 1972-73 classes. Although two years of data represent too little information to establish a trend, this differential is well worth noting. The pattern may be suggesting another manipulable source that contributes to educational "disadvantage."

If the differences in units completed is related to differences in program use, the relationship between instructional days and Entry Survey score category also ought to hold. The data in Table 24 and Figure 15 confirm that this is so. Instructional days increase regularly across the Entry Survey score categories. The largest difference

TABLE 24

BRP Instructional Days by Entry Survey Score Categories*									
	ENTRY SURVEY SCORE CATEGORIES								
	< 9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	> 16
Total Sample:	105/56	107/75	109/173	112/361	121/508	128/621	133/553	136/359	148/262
Ethnic Groups:									
Black			91/66	94/87	101/91	108/46	108/26	145/8	132/17
Spanish	118/19	110/12	121/9	104/14	149/15	163/8	164/6	168/3	138/4
Other	97/10	126/29	130/76	120/221	126/376	130/542	135/485	136/328	148/225
Income Level:									
< 5,000	113/26	110/34	107/47	102/74	110/70	131/39	129/23	141/11	161/13
5-8,000	100/23	104/37	110/85	116/173	119/209	130/216	139/160	135/79	143/34
8-12,000	86/2	131/2	116/17	107/61	125/171	127/259	130/239	133/148	138/90
> 12,000			88/1	104/5	131/20	139/42	145/56	141/87	151/85
Title I Eligibility:									
Yes	106/44	104/54	109/121	110/206	115/283	126/293	131/227	130/127	148/79
No	109/7	120/19	114/37	110/115	127/194	128/28	135/279	139/205	145/163
Reading Level:									
Above		142/1	100/3	132/18	128/49	137/109	138/150	143/142	146/129
At	108/3	152/8	121/31	105/57	138/151	131/262	134/190	129/110	152/80
Below	97/23	112/38	113/87	113/204	110/226	123/180	132/126	133/65	155/28
Location:									
Inner City	101/16	96/31	105/68	109/82	119/58	127/47	137/26	155/16	160/11
Urban	97/16	119/25	99/53	109/133	116/201	125/225	132/187	136/112	152/70
Suburban	169/9	143/8	148/22	118/64	130/137	129/205	136/199	138/140	148/123
Rural	71/7	86/6	119/14	121/33	122/66	135/78	127/47	138/30	180/8

*Table entries show: mean/number of classes.

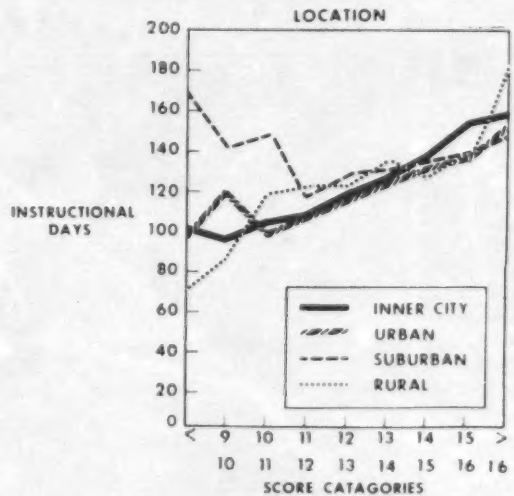
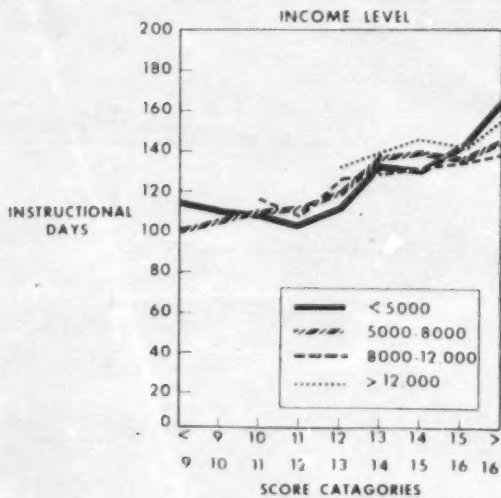
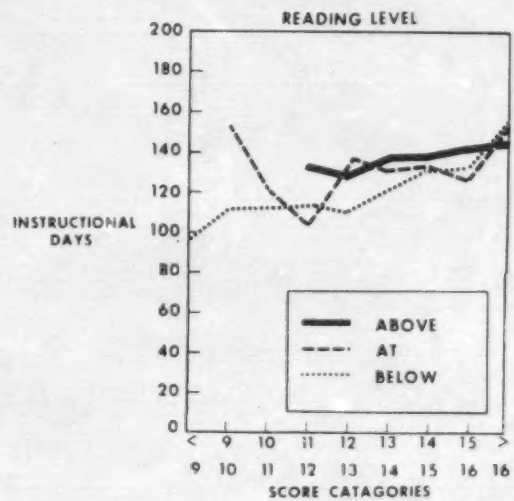
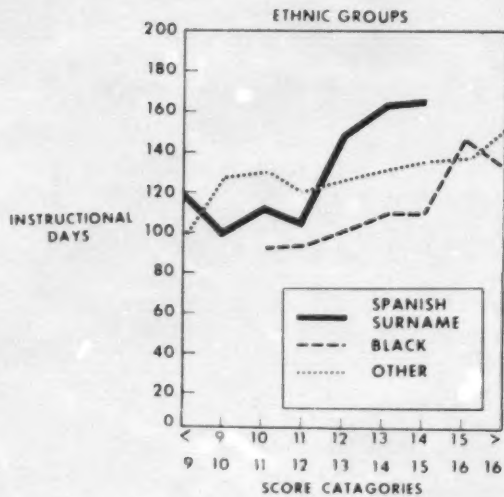
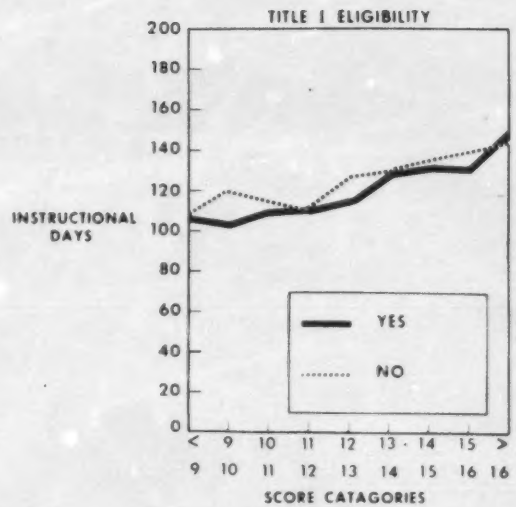
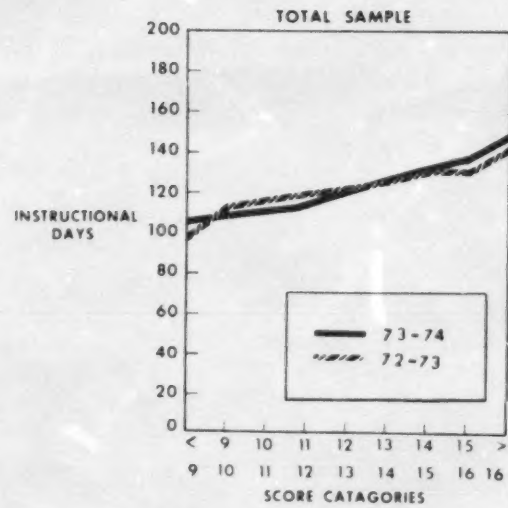


Figure 15. BRP instructional days by Entry Survey score categories.*

*Figure points based on a small number of classes (less than 6) have been omitted.

in this relationship for user characteristic categories is for location. Here the "suburban" classes spend an average of 70 more calendar days on BRP instruction than "urban and inner city" classes and approximately 100 more days than "rural" classes in corresponding Entry Survey intervals. Large differences in instructional days spent can be found for the other categories of users as well.

Comparative data for the two years are also presented in Figure 15. The 1973-74 data show classes from lower Entry Survey score intervals spent slightly fewer days than corresponding classes in 1972-73. On the other hand, classes from the higher Entry Survey score intervals spent more time. Again the implications for clarifying the meaning of educational "disadvantage" are provocative.

EFFECTIVE IMPLEMENTATION

The results of the second-year installation strongly confirm the creditable and credible instructional success reported for the first-year installation of the Kindergarten Program. The effects of schooling appear not only replicable and reliable but impressive when instruction is supported by well-developed instructional products produced by programmatic R&D. Such programmatic R&D has direct positive effects on schooling, and schooling coupled with programmatic R&D has strong effects on students.

An instructional product, like any product, can be used poorly; implementation can fall apart. However, over the two year period, there is no indication that implementation failures occurred. Rather all information regarding the second-year installation indicates increasing implementation success. Schools appeared to use the Program during the second-year with greater ease and effectiveness, as the installation "settled down." Evolving patterns of program emphasis, for example, appear to stress earlier and more sustained use of the Beginning Reading Program and correspondingly less emphasis on the Instructional Concepts Program.

At the end of the two years, there is every indication that the results obtained with the Kindergarten Program are under the instructional control of the schools. That is, schools using the Program are in position to determine the instructional effects they wish to achieve and have an accurate picture of the emphasis required on their part to produce these instructional effects.

Overall, there are indications that user groups displaying the lowest levels of proficiency in 1972-73 showed increased effectiveness in the second-year of program implementation. These include minority groups, ESEA Title I eligible schools, lower income levels and urban and inner city locations. However, there are still signs of subtle but distinct means by which children in such settings are inadvertently

treated disadvantageously in instruction. By identifying educational disadvantages in terms of conditions within rather than outside the direct discretion of schools, it should be possible to counter and eliminate the unintended negative consequences of such inadvertent treatment in the future. With well-developed products it appears that equal educational opportunity can be provided by simply providing common instruction that places far fewer demands on schools and the public than conventional views of compensatory education imply.

In short and in sum, the findings reported here show that schools can instruct effectively and reliably and that they can implement the products of programmatic R&D economically, efficiently, and to the benefit of the nation's children.

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